

Alarm Gateway Object for Wonderware Application Server

**User Guide
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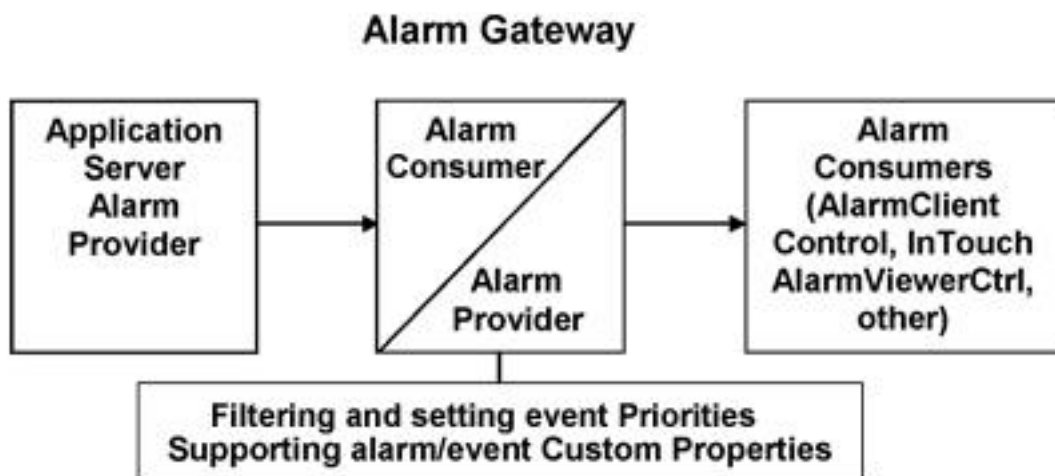
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Alarm Gateway Object for Wonderware Application Server

Introduction

The **Alarm Gateway Object** (Alarm Gateway) is a basic component of Wonderware Finland **Alarm Extension Pack Standard Edition** and provides functionality to create separate configurable Alarm Provider for alarms coming from Wonderware Application Server (WAS) and/or other Alarm Providers compatible with Wonderware Alarm System:



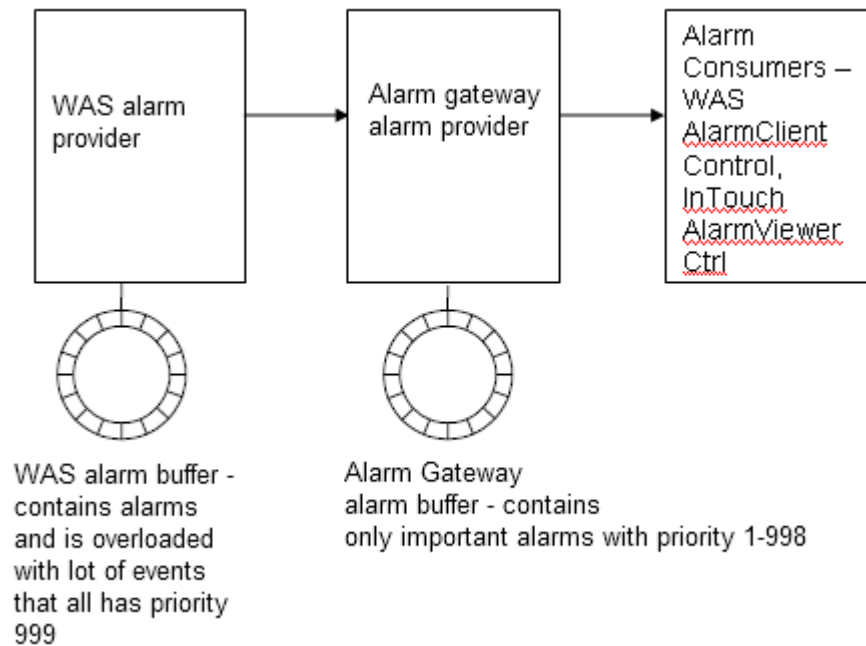
In case included in Wonderware Finland **Alarm Extension Pack UReason Edition**, the Alarm Gateway Object provides also the functionality to send/receive alarms to/from Wonderware alarming system from/to **UReason alarming system**.

The Alarm Gateway can be used to solve the following tasks:

Avoid alarm loss in high loaded systems:

WAS Historical alarms and events are stored in a circular buffer, where the oldest entries are discarded to make room for new ones, so in case there generated a lot of events then important alarms can be lost.

By using the Alarm Gateway, it is possible to store all important alarms in separate Alarm Gateway buffer - that can be done by querying alarms/events only with priorities from 1 to 998:



Note: Alarm Gateway alarm buffer can contain about 6000-7000 alarms. The total number of stored alarms depends on size of alarms.

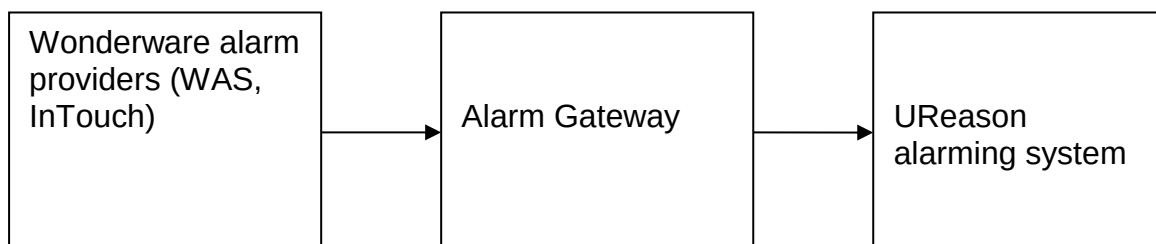
Change the event priority:

WAS alarming system does not provide possibility to configure event priority - all events have built-in priority 999.

By using Alarm Gateway, it is possible to change the event priority by using the `setPriority` custom attribute. For more information see the “Custom attributes” section “`setPriority`” later in this User Guide.

Connect to UReason alarming system:

Alarm Gateway can send alarms/events from Wonderware alarming system to UReason alarming system. For more information see “UReason gateway” section later in this User Guide.



Installing the Alarm Gateway Object

Hardware requirements

The Alarm Gateway object has the same hardware requirements as Wonderware Application Server. It is strongly recommended to have computer with 2 gigahertz (GHz) or faster processor, 32/64-bit. A multi-core processor is also strongly recommended. The Intel Itanium 2 processor is not supported.

Software requirements

The Wonderware **Application Server 3.1** version or later are supported.

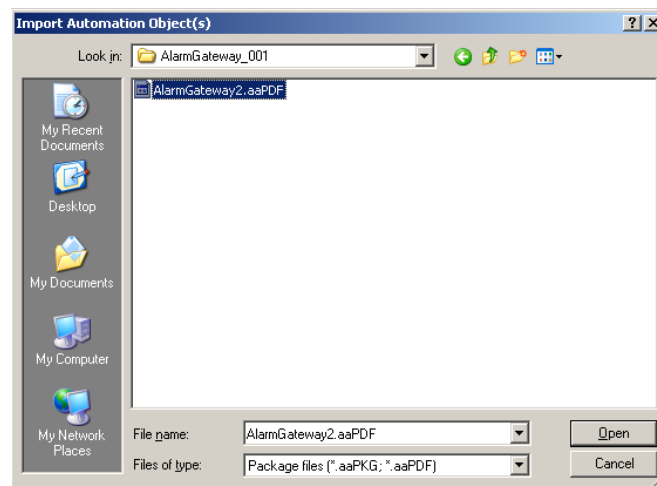
Package content

- **AlarmGateway_001** folder - **contains** standalone **Alarm Gateway** object installation.
- **P185m22.pdf** – User Manual (this document)

Installing standalone object

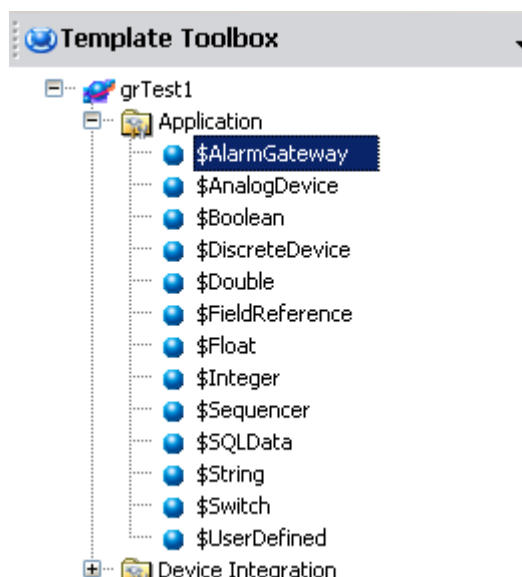
Object import

- 1) Copy **Alarm Gateway** object to some folder, e.g. to C:/Install.
2. Start the **ArchestrA IDE** and import the **AlarmGateway2.aaPDF** file from **AlarmGateway_001** folder to a new/existing galaxy (in the further explanation we will assume that a new galaxy **grTest1** is used).



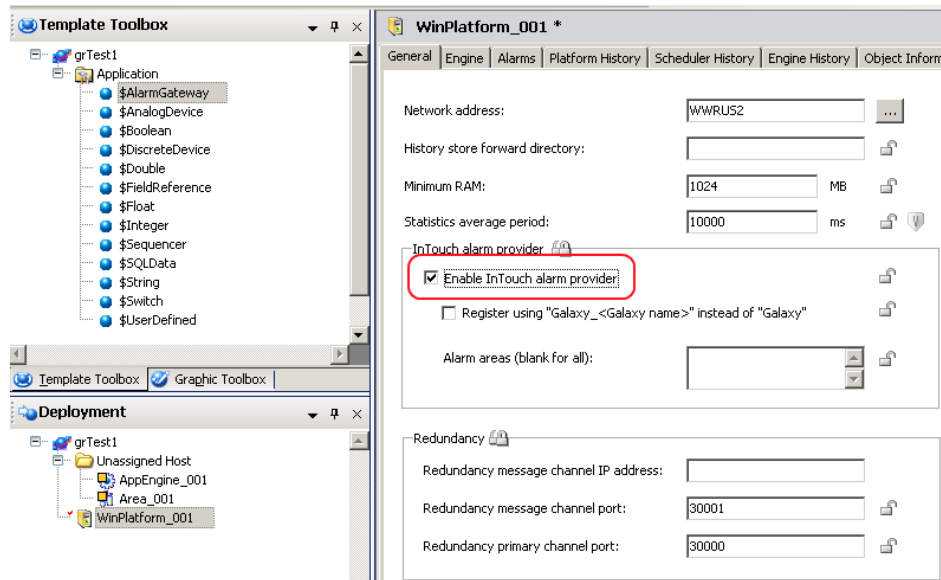
Note: If you are using existing galaxy and there are already deployed an older Alarm Gateway object version please, following upgrade instruction from section **Object upgrade procedure**.

- 3) After importing **\$AlarmGateway** template is added to Template Toolbox:



Object configuration

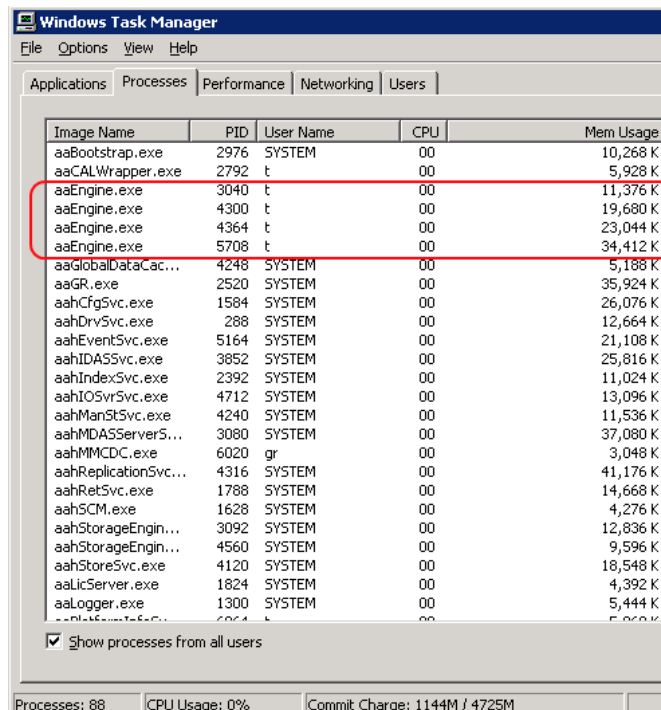
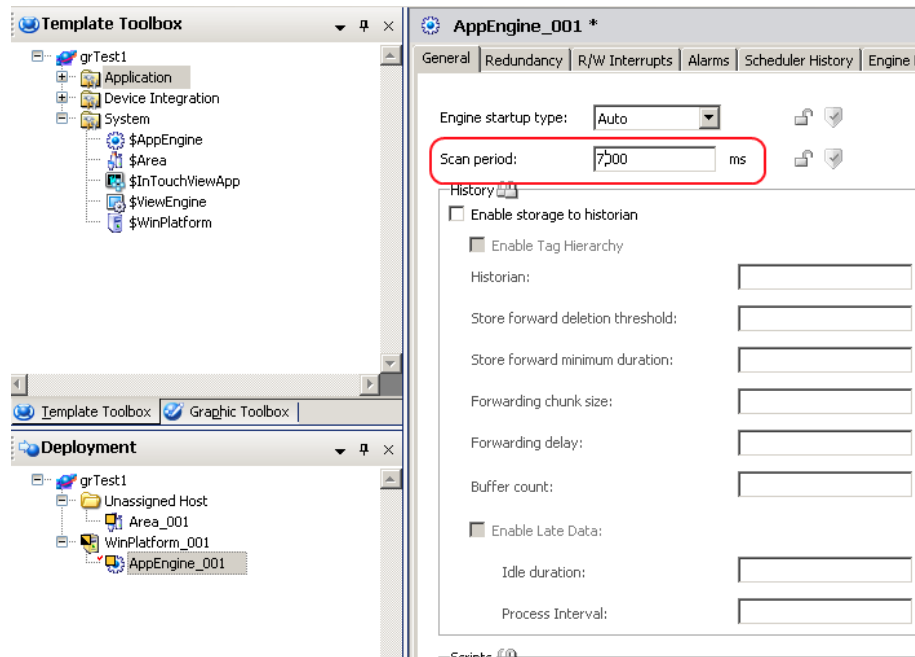
- 1) Create WinPlatform object (if is not existing already) with alarm provider feature enabled.



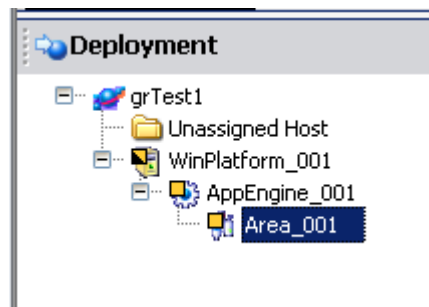
- 2) Create AppEngine and assign it to Platform object (Deployment View)

Note: Highly recommended is to deploy object Alarm Gateway to separate engine where are no production objects deployed, to distribute possible CPU load among multiple CPU cores.

Engine scan period is recommended to set at least 1 second and more (2-3 seconds) if object is planned to be used in high load alarm systems (more than 50 active alarms) and with enabled additional features like **Custom Alarm/Event attributes** **UReason alarm system**.



3) Create Area object and assign in to AppEngine object

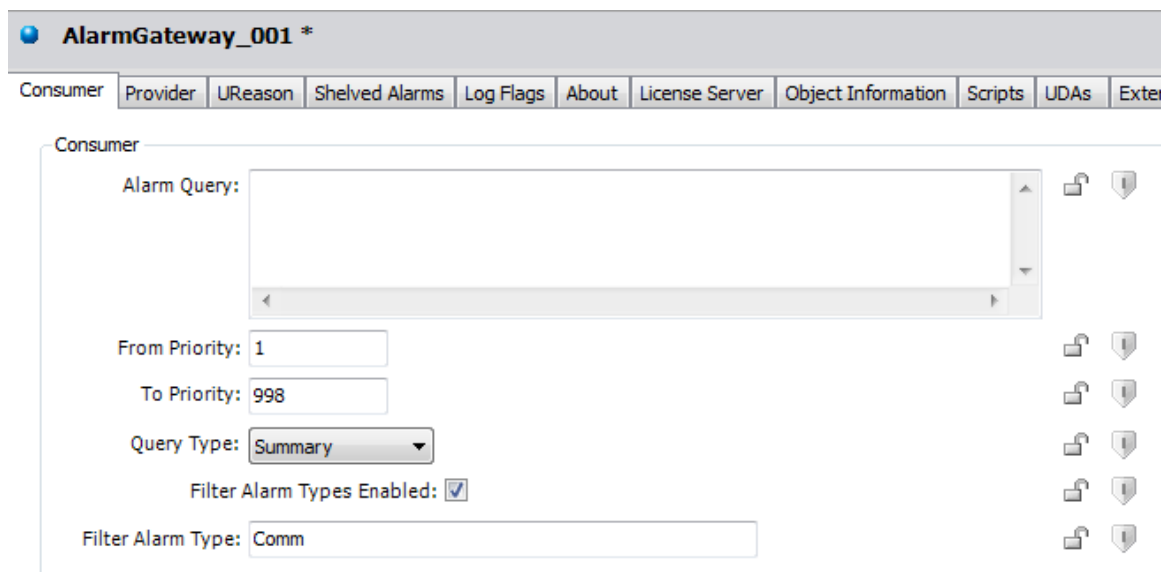


- 4) Create **Alarm Gateway** instance and assign it to Area object.
- 5) Open **Alarm Gateway** object editor and configure following parameters in:

a) Tab Consumer:

- Set **Alarm Query**: \Galaxy!Area_001
- Set **To Priority**: 1
- Set **From Priority**: 998
- Enable **Filter Alarm Types**: set filter Comm

Where **Area_001** is area name what is host of Alarm Gateway object or other area can be specified that host objects with alarming enabled.



b) Tab Provider:

Change alarm provider name if needed of alarm clients:

AlarmGateway_001 *

Consumer Provider **UReason** Shelved Alarms Log Flags About License Server Object Information Scripts UDAs Ext...

Provider

Name:

Alarm Historical Buffer Size:

Alarm Group Hierarchy File Location:

Enable Alarm Backup: ☐

Alarm Backup XML Location:

Exposed Alarm Fields arrays size:

Custom Acked Alarm Field

Enable Custom Acked alarm field: ☐

Custom Acked alarm Field:

c) Tab **UReason**

Enable connection to **UReason** alarming system if used:

AlarmGateway_001 *

Consumer Provider **UReason** Shelved Alarms Log Flags About License Server Obje...

Enable gateway to UReason alarming system: ☐

Alarm server

IPAddress:

Port:

User:

Password:

Remote Name:

Mimic.Path.ID1:

Mimic.Path.ID2:

Suffix:

Local

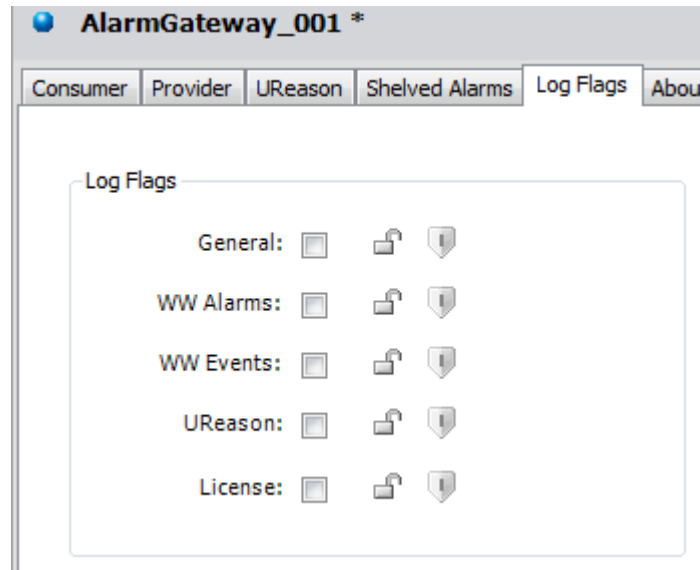
Name:

Port:

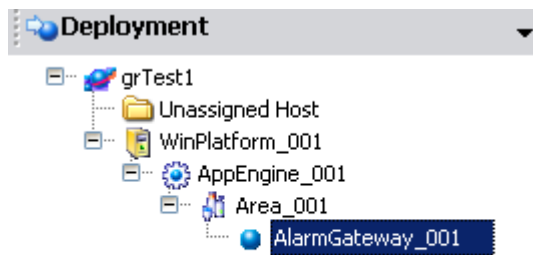
Send UReason alarms to Wonderware alarm system: ☐

d) Tab Log Flags

If needed enable diagnostic logging, for more details see section **Advanced Troubleshooting**



- 6) Create or import some objects with alarming enabled under **Area_001**.
- 7) Deploy created all objects



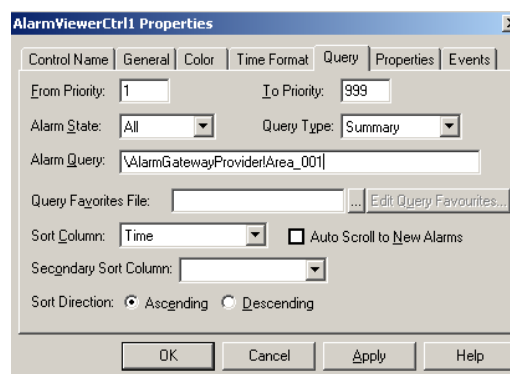
- 8) License Alarm Gateway object - see Section **Licensing requirements** for details.
- 9) Create or import InTouch application to test AlarmGateway alarms – configure alarm client

Alarm Query:

\\WWNode\AlarmGatewayProvider!Area_001 or

\\192.168.75.209\AlarmGatewayProvider!Area_001

Note: Query without Nodename like **AlarmGatewayProvider!Area_001** or **/AlarmGatewayProvider!Area_001** will not work on Windows 2008



- 10) Run InTouch application and check alarms

Main

Time ▲	State	Class	Type	Priority ▲
04/01/2012 12:55:15 PM	UNACK_RTN	VALUE	Hi	500
04/01/2012 12:55:15 PM	UNACK_RTN	DSC	DSC	500
04/01/2012 12:55:15 PM	UNACK_RTN	VALUE	HiHi	500
04/01/2012 12:55:15 PM	UNACK_RTN	VALUE	Hi	500
04/01/2012 12:55:15 PM	UNACK	DSC	DSC	488
04/01/2012 12:55:15 PM	UNACK_RTN	VALUE	HiHi	500
04/01/2012 12:55:43 PM	UNACK_RTN	VALUE	LoLo	500
04/01/2012 12:55:50 PM	UNACK_RTN	VALUE	LoLo	500


 Displaying 1 to 8 of 10 alarms. Default Query 100 % Complete

Licensing requirements

Alarm Gateway object support two types of licenses:

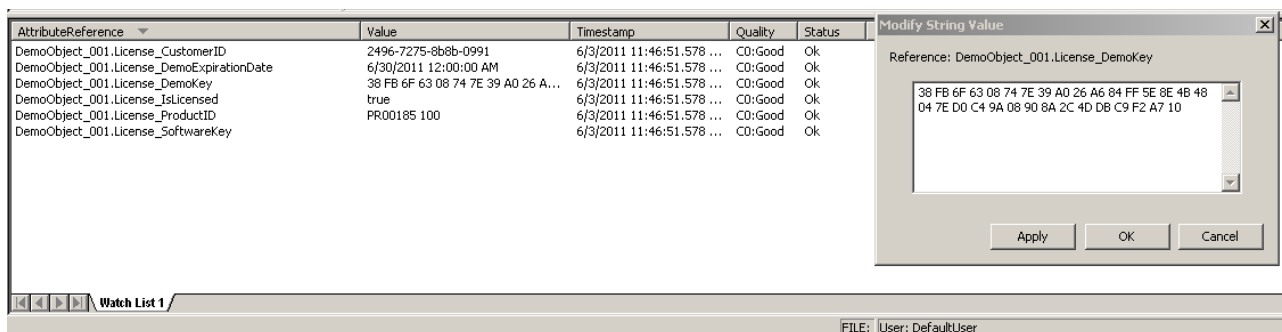
- The **demo license** is for free and provides an unlimited functionality, but it is valid only for a limited time period.
- The **software key** enables the Alarm Gateway Object unlimited full time running without any restrictions.

Demo License installation

The **demo license** is for free and provides an unlimited functionality, but it is valid only for a limited time period. After demo license expiration, the Alarm Gateway will stop to provide the alarms. The demo license can be obtained by sending inquiry to info@wonderware.fi.

To activate the received demo License key, you need to set it to object **License_DemoKey** attribute:

If demo license is valid (correct key is installed) **License_IsLicensed** attribute is true and in **License_DemoExpirationDate** attribute is displayed expiration date after that product stops working.



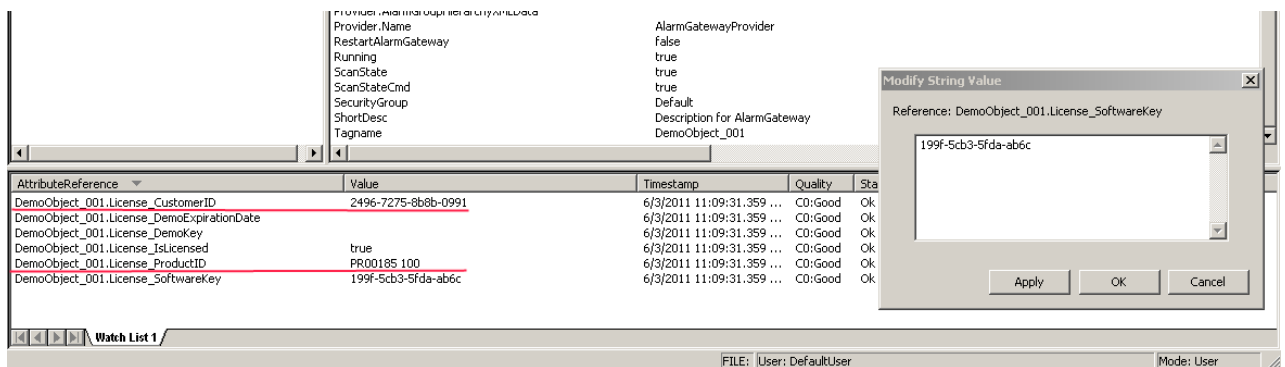
Software key installation

The **software key** enables the Alarm Gateway Object unlimited full time running without any restrictions.

To get and enable the **software key**:

- get "Product ID" from object **License_ProductID** attribute (e.g. PR00185 100);
- get "Customer ID" from object **License_CustomerID** attribute;
- copy/paste it to e-mail (or text file or similar) and provide this "Customer ID" string when ordering the Alarm Gateway Object;
- when product is purchased, copy the received "Software Key" to object **License_SoftwareKey** attribute:

If license key is valid (correct key is installed) **License_IsLicensed** attribute is set to true and product is ready for use.



Licensing run-time attributes:

Attribute	Description	Run-Time Access
License_CustomerID	Unique generated customer ID	Read-Only
License_DemoExpirationDate	Demo license expiration date	Read-Only
License_DemoKey	Demo license key	User
License_IsLicensed	If True then product is licensed	Read-Only
License_ProductID	Product ID	Read-Only
License_SoftwareKey	Product software key	User

Configuration

For general information about objects (including relationships, deployment and alarm distribution) - see the Wonderware Integrated Development Environment (IDE) documentation.

For information on configuration options for object information, scripts, user-defined attributes (UDAs), or attribute extensions, click **Extensions Help** in the Help file header.

General Configuration

Use the **Consumer** tab to configure and tune the behavior of the Alarm Gateway Object consumer:

The screenshot shows the 'Consumer' configuration tab for 'AlarmGateway_001'. The interface includes a tabbed menu at the top with options: Consumer, Provider, UReason, Shelved Alarms, Log Flags, About, License Server, Object Information, Scripts, UDAs, and Extensions. The 'Consumer' tab is active, displaying a large text area for 'Alarm Query', two numeric input fields for 'From Priority' (set to 1) and 'To Priority' (set to 998), a dropdown menu for 'Query Type' (set to 'Summary'), a checkbox for 'Filter Alarm Types Enabled' (checked), and a text field for 'Filter Alarm Type' (set to 'Comm'). To the right of these fields are several small icons for help and saving.

Consumer:

Editor Option	Associated Attribute (s)	Description
Alarm Query	Consumer.AlarmQuery	Consumer Alarm Query
From Priority	Consumer.FromPriority	Enter the starting value of the alarm priority range
To Priority	Consumer.ToPriority	Enter the ending value of the alarm priority range
Query Type	Consumer.QueryType	Alarm query type.
Alarm Type filter	Enable/disable: Consumer.FilterAlarmTypesEnabled Consumer.FilterAlarmTypes	Provider advanced functionality to filter alarms by type e.g. can filter out all Comm alarms.

Use the **Provider** tab to configure and tune the behavior of the Alarm Gateway Object provider:

Provider:

AlarmGateway_001 *

Consumer Provider UReason Shelved Alarms Log Flags About License Server Object Information Scripts UDAs Exte

Provider

Name:

Alarm Historical Buffer Size:

Alarm Group Hierarchy File Location: ...

Enable Alarm Backup: ☐  

Alarm Backup XML Location: ...

Exposed Alarm Fields arrays size:  

Custom Acked Alarm Field

Enable Custom Acked alarm field: ☐  

Custom Acked alarm Field:  

Editor Option	Associated Attribute	Description
Name	Provider.Name	Alarm provider name
Alarm Historical Buffer Size	Provider.AlarmBufSize	Alarm buffer size.
Alarm Group Hierarchy XML	Provider.AlarmHierarchyFile	Path to WAS generated Alarm (Area) hierarchy file Default value: c:\Program Files\Archestra\Framework\Bin\GlobalDataCache\AreaHierarchy.xml
Alarm Backup XML Location	Provider.AlarmBackup Location	Alarm Backup XML files Location on disk
Exposed Alarm Fields arrays Size	Exposed_Alarm_Fields_Arrays_Size	Exposed Alarm Fields array size for more details see section Exposed Alarm Fields
Custom Acked Alarm field	Enable/disable: EnableCustomAckField CustomAckAlarmField	For more details see section Custom Acked alarm comment field

Run-Time Object Attributes

All object attributes are grouped into following groups by prefix:

AlarmGateway - defines attributes for Alarm Gateway general configuration and status.

Provider_ - defines attributes for Alarm Provider configuration

Consumer_ - defines attributes for Alarm Consumer configuration.

Licence_ - defines attributes for licensing

Set - defines custom attributes – see section “Custom attributes” for more information

The following table describes the run-time only attributes for the Alarm Gateway Object.

Note: Configurable run-time attributes are described in the configuration sections. For more information, see **Configuration** section above.

Attribute	Description	Run-Time Access
AlarmGateway_Started	If true Alarm Gateway is Started and running.	Read-Only
AlarmGateway_LastErrorMessage	Last Error Message	Read-Only
AlarmGateway_LastErrorCode	Last Error Code (No errors = 0)	Read-Only
AlarmGateway_Restart	Trigger – if set to True then restarts Alarm Gateway.	User
Consumer.Status	Current status of Alarm Gateway	Read-Only
AlarmGateway_AlarmGroups	Displays all created alarm groups	Read-Only

Note: It is highly recommended to run any Alarm Gateway Object in separate Engine since Alarm Gateway uses scan interval for reading the alarms. Recommended Engine scan interval for Alarm Gateway is at least 1000 ms.

Custom Alarm/Event attributes

By using custom attributes, it is possible to change following alarm data fields in Wonderware alarm system or in UReason alarm system:

For Wonderware alarm custom attributes prefix **setWW_** is used for Ureason attribute prefix **setUR_** is used.

Custom Attribute	Alarming system	Description
SetWW_User1	Wonderware	User-defined field number 1.
SetWW_User2	Wonderware	User-defined field number 2.
SetWW_User3	Wonderware	User-defined field, string.
SetWW_Priority	Wonderware	Alarm/Event Priority.
SetUR_Source	UReason	Alarm Source
SetUR_Class	UReason	Alarm Class

Custom attributes can be set from WAS scripts with following command:

Syntax: objectName.CustomAttribute = "Alarm/Event name = value"

Wonderware alarm system custom attributes

SetWW_Priority

Is used to set **Wonderware** alarm system alarm and event **Priority** (valid range from 1 to 999).

Sample:

Following command sets Wonderware alarming system alarm priority to 10 for alarm Generator_001.Analog_001.Lo:

```
AlarmGateway_001.setWWPriority = Me.Tagname + ".Analog_001.Lo=10";
```

Time ▾	Name	Priority	User1	User2	User3	State
09/27/2011 10:38:24	Generator_001.Analog_001.Lo	10	10.200000	23.299999	Test 1	UNACK
09/27/2011 10:38:24	Generator_001.Analog_001	999	0.000000	0.000000		
09/27/2011 10:36:16	Generator_001.ScanStateCmd	999	0.000000	0.000000		
09/27/2011 10:36:16	F1.ScanStateCmd	999	0.000000	0.000000		

Displaying 1 to 4 of 4 alarms. Default Query 100 % Complete

Note: value is needed to set before alarm is active.

SetWW_User1

Is used to set **Wonderware** alarm system User-defined (**User1**) float field.

Sample:

Following command sets Wonderware alarming system alarm User 1 field to 10.2 for alarm Generator_001.Analog_001.Lo:

```
AlarmGateway_001.setWW_User1 = Me.Tagname + ".Analog_001.Lo=10.2";
```

Time ▾	Name	Priority	User1	User2	User3	State
09/27/2011 10:38:24	Generator_001.Analog_001.Lo	10	10.200000	23.299999	Test 1	UNACK
09/27/2011 10:38:24	Generator_001.Analog_001	999	0.000000	0.000000		
09/27/2011 10:36:16	Generator_001.ScanStateCmd	999	0.000000	0.000000		
09/27/2011 10:36:16	F1.ScanStateCmd	999	0.000000	0.000000		

Displaying 1 to 4 of 4 alarms. Default Query 100 % Complete

Note: value is needed to set before alarm is active.

SetWW_User2

Is used to set **Wonderware** alarm system User-defined (**User2**) float field.

Sample:

Following command sets Wonderware alarming system alarm User 2 field to 23.3 for alarm Generator_001.Analog_001.Lo:

```
AlarmGateway_001.setWW_User2 = Me.Tagname + ".Analog_001.Lo=23.3";
```

Time ▾	Name	Priority	User1	User2	User3	State
09/27/2011 10:38:24	Generator_001.Analog_001.Lo	10	10.200000	23.299999	Test 1	UNACK
09/27/2011 10:38:24	Generator_001.Analog_001	999	0.000000	0.000000		
09/27/2011 10:36:16	Generator_001.ScanStateCmd	999	0.000000	0.000000		
09/27/2011 10:36:16	F1.ScanStateCmd	999	0.000000	0.000000		

Displaying 1 to 4 of 4 alarms. Default Query 100 % Complete

Note: value is needed to set before alarm is active.

SetWW_User3

Is used to set **Wonderware** alarm system User-defined (**User3**) string field.

Sample:

Following command sets Wonderware alarming system alarm User 3 field to 'Test 1' for alarm Generator_001.Analog_001.Lo:

```
AlarmGateway_001.setWW_User3 = Me.Tagname + ".Analog_001.Lo=Test 1";
```

Time	Name	Priority	User1	User2	User3	State
09/27/2011 10:38:24	Generator_001.Analog_001.Lo	10	10.200000	23.299999	Test 1	UNACK
09/27/2011 10:38:24	Generator_001.Analog_001	999	0.000000	0.000000		
09/27/2011 10:36:16	Generator_001.ScanStateCmd	999	0.000000	0.000000		
09/27/2011 10:36:16	Fl.ScanStateCmd	999	0.000000	0.000000		

Displaying 1 to 4 of 4 alarms. Default Query 100 % Complete

Setting value from Object Viewer:

The screenshot shows the Object Viewer with the following tree structure:

- Test2
 - WinPlatform_001[MAIN00]
 - ae_AG
 - A_AG [A_AG]
 - AlarmGateway_001 [AlarmGateway_001]
 - P_AppEngine_001
 - ViewEngine_001

The right pane shows the attributes of the selected object, AlarmGateway_001:

Attribute Name	Value
LogFlag.WWAlarms	true
LogFlag.WWEvents	true
Mimic.Alarmname	
Mimic.InTouchWindow	
Provider.AlarmBackup.AutoResto...	false
Provider.AlarmBackupEnabled	false
Provider.AlarmBackupLocation	
Provider.AlarmBufSize	500000
Provider.AlarmHierarchyFile	c:\Program Files\Archestr\A\Framework\Bin\GlobalDataCach

A dialog box titled "Modify String Value" is open, showing the reference "AlarmGateway_001.setWW_User3" and the value "GenAlarms_001.AnalogAlarm1.Lo=Test 0xFF5". The dialog has "Apply", "OK", and "Cancel" buttons.

Below the dialog, the following text is visible:

```
setWW_User3
setWW_User1
setWW_User2
setWW_User3
ShortDesc
```

On the right side of the dialog, the following text is visible:

```
GenAlarms_001.AnalogAlarm1.Lo=Test 0xFF5
Description for AlarmGateway
```

Note: value is needed to set before alarm is active.

SetWW_Operator

Is used to set **Wonderware** alarm system User-defined (Operator) string field.

Sample:

Following command sets Wonderware alarming system alarm Operator field to 'Test 1' for alarm Generator_001.Analog_001.Lo:

```
AlarmGateway_001.setWW_Operator = Me.Tagname + ".Analog_001.Lo=Test 1";
```

AEP Current Alarms (Summary): \192.168.75.171\AlarmGatewayProviderIF1 \195.2.103.13\AlarmGatewayProviderIURReason

	AlarmComment	Operator	OperatorFullName	OperatorNode	OperatorDomain	TimeLCT	User1	User2
16 PMA	DiscreteAlarm1 ...			192.168.75.171		2012.10.14. 12:23:15	0	0
16 PMA	AnalogAlarm1 D...	ExtraDataField -11,1	ExtraDataFieldC -11,1	192.168.75.171	ExtraDataFieldB -11,1	2012.10.14. 12:23:15	1121	1121
16 PMA	AnalogAlarm1 D...	ExtraDataField -7,1	ExtraDataFieldC -7,1	192.168.75.171	ExtraDataFieldB -7,1	2012.10.14. 12:23:15	1121	1121
	AnalogAlarm1 D...	ExtraDataField -8,1	ExtraDataFieldC -8,1	192.168.75.171	ExtraDataFieldB -8,1	2012.10.14. 12:23:15	1121	1121

Displaying 1 to 4 of 5 alarms Default 50% Complete Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

Note: value is needed to set before alarm is active.

SetWW_OperatorFullName

Is used to set **Wonderware** alarm system User-defined (OperatorFullName) string field.

Sample:

Following command sets Wonderware alarming system alarm OperatorFullName field to 'Test 1' for alarm Generator_001.Analog_001.Lo:

```
AlarmGateway_001.setWW_OperatorFullName = Me.Tagname +  
".Analog_001.Lo=Test 1";
```

AEP Current Alarms (Summary): \192.168.75.171\AlarmGatewayProviderIF1 \195.2.103.13\AlarmGatewayProviderIURReason

	AlarmComment	Operator	OperatorFullName	OperatorNode	OperatorDomain	TimeLCT	User1	User2
16 PMA	DiscreteAlarm1 ...			192.168.75.171		2012.10.14. 12:23:15	0	0
16 PMA	AnalogAlarm1 D...	ExtraDataField -11,1	ExtraDataFieldC -11,1	192.168.75.171	ExtraDataFieldB -11,1	2012.10.14. 12:23:15	1121	1121
16 PMA	AnalogAlarm1 D...	ExtraDataField -7,1	ExtraDataFieldC -7,1	192.168.75.171	ExtraDataFieldB -7,1	2012.10.14. 12:23:15	1121	1121
	AnalogAlarm1 D...	ExtraDataField -8,1	ExtraDataFieldC -8,1	192.168.75.171	ExtraDataFieldB -8,1	2012.10.14. 12:23:15	1121	1121

Displaying 1 to 4 of 5 alarms Default 50% Complete Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

Note: value is needed to set before alarm is active.

SetWW_OperatorDomain

Is used to set Wonderware alarm system User-defined (OperatorDomain) string field.

Sample:

Following command sets Wonderware alarming system alarm Operator Domain field to 'Test 1' for alarm Generator_001.Analog_001.Lo:

```
AlarmGateway_001.setWW_OperatorDomain = Me.Tagname +  
".Analog_001.Lo=Test 1";
```

AEP Current Alarms (Summary): \192.168.75.171\AlarmGatewayProviderIF1 \195.2.103.13\AlarmGatewayProviderIReason

	AlarmComment	Operator	OperatorFullName	OperatorNode	OperatorDomain	TimeLCT	User1	User2
	DiscreteAlarm1 ...			192.168.75.171		2012.10.14. 12:23:15	0	0
16 PMA	AnalogAlarm1 D...	ExtraDataField -11,1	ExtraDataFieldC -11,1	192.168.75.171	ExtraDataFieldB -11,1	2012.10.14. 12:23:15	1121	1121
16 PMA	AnalogAlarm1 D...	ExtraDataField -7,1	ExtraDataFieldC -7,1	192.168.75.171	ExtraDataFieldB -7,1	2012.10.14. 12:23:15	1121	1121
	AnalogAlarm1 D...	ExtraDataField -8,1	ExtraDataFieldC -8,1	192.168.75.171	ExtraDataFieldB -8,1	2012.10.14. 12:23:15	1121	1121

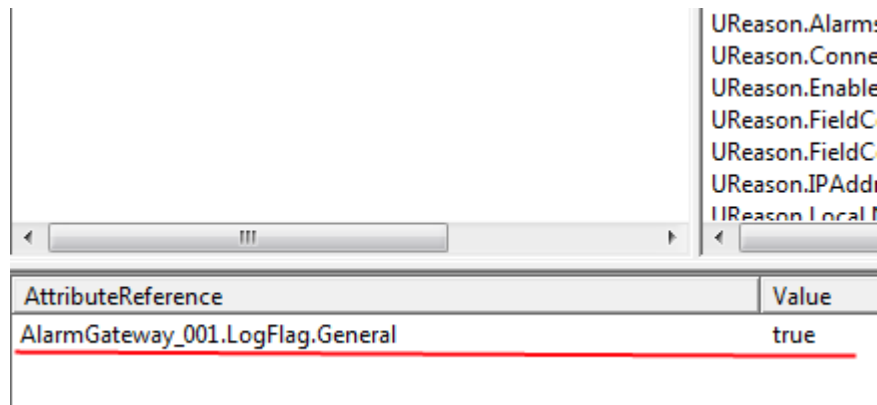
Displaying 1 to 4 of 5 alarms Default 50% Complete Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

Note: value is needed to set before alarm is active.

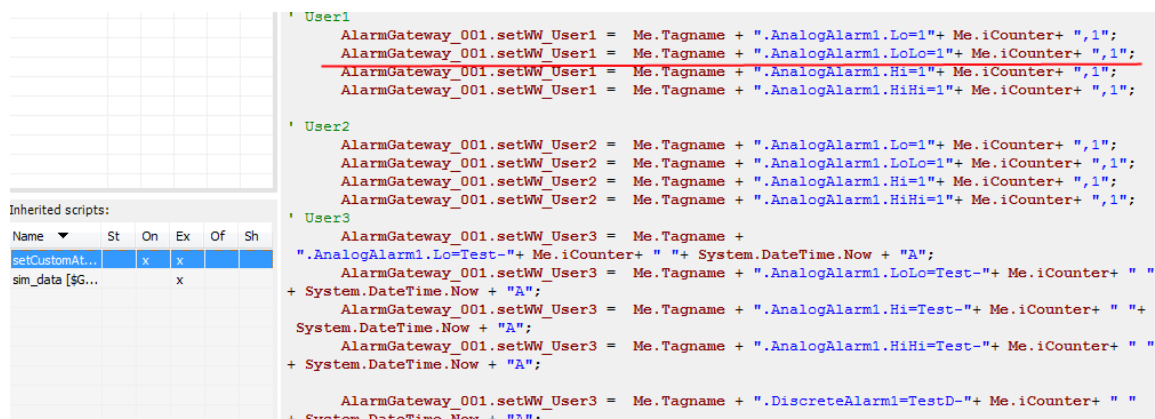
Troubleshooting Wonderware alarm system custom attributes

In case custom attribute is not set for alarm following steps can be performed to troubleshoot the issue.

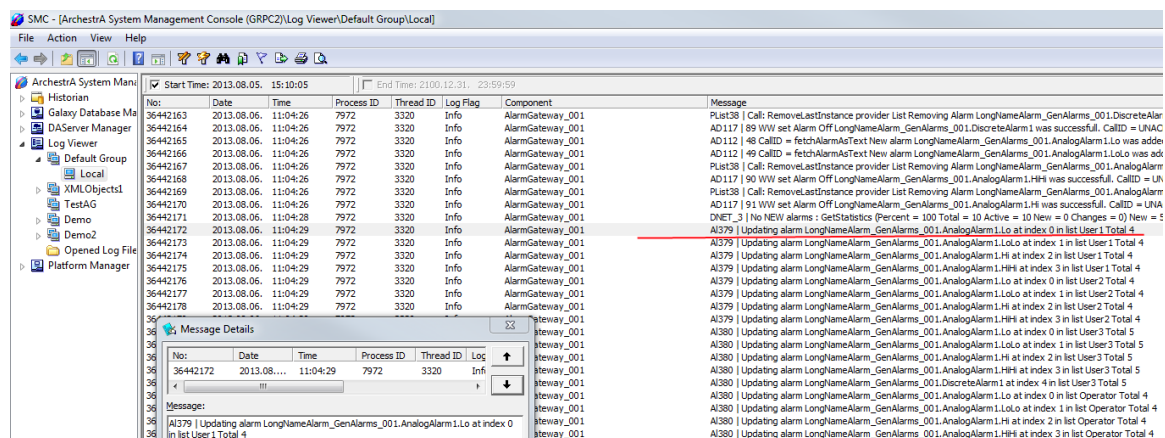
Enable general alarm flag:



Set custom attribute e.g. from WAS script:



After script is executed check is appropriate message (AI379) logged in logger that indicates that custom attribute is set:



Rise alarm and check is Alarm name is the same as alarm name defined in set command:

Management Console (GRPC2)\Log Viewer(Default Group\Local)

Start Time: 2013.08.05. 15:10:05 End Time: 2100.12.31. 23:59:59

No.	Date	Time	Process ID	Thread ID	Log Flag	Component	Message
442163	2013.08.06.	11:04:26	7972	3320	Info	AlarmGateway_001	PList38 Call: RemoveLastInstance provider List Removing Alarm LongNameAlarm_GenAlarms_00
442164	2013.08.06.	11:04:26	7972	3320	Info	AlarmGateway_001	AD117 89 WW set Alarm Off LongNameAlarm_GenAlarms_001.DiscreteAlarm1 was successful. (
442165	2013.08.06.	11:04:26	7972	3320	Info	AlarmGateway_001	AD112 48 CallID = fetchAlarmAsText New alarm LongNameAlarm_GenAlarms_001.AnalogAlarm:
442166	2013.08.06.	11:04:26	7972	3320	Info	AlarmGateway_001	AD112 49 CallID = fetchAlarmAsText New alarm LongNameAlarm_GenAlarms_001.AnalogAlarm:
442167	2013.08.06.	11:04:26	7972	3320	Info	AlarmGateway_001	PList38 Call: RemoveLastInstance provider List Removing Alarm LongNameAlarm_GenAlarms_00
442168	2013.08.06.	11:04:26	7972	3320	Info	AlarmGateway_001	AD117 90 WW set Alarm Off LongNameAlarm_GenAlarms_001.AnalogAlarm1.HiHi was successf
442169	2013.08.06.	11:04:26	7972	3320	Info	AlarmGateway_001	PList38 Call: RemoveLastInstance provider List Removing Alarm LongNameAlarm_GenAlarms_00
442170	2013.08.06.	11:04:26	7972	3320	Info	AlarmGateway_001	AD117 91 WW set Alarm Off LongNameAlarm_GenAlarms_001.AnalogAlarm1.HiHi was successf
442171	2013.08.06.	11:04:28	7972	3320	Info	AlarmGateway_001	DNET_3 No NEW alarms : GetStatistics (Percent = 100 Total = 10 Active = 10 New = 0 Changes
442172	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI379 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Lo at index 0 in list User 1
442173	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI379 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.LoLo at index 1 in list User 1
442174	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI379 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Hi at index 2 in list User 1
442175	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI379 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.HiHi at index 3 in list User 1
442176	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI379 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Lo at index 0 in list User 2
442177	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI379 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.LoLo at index 1 in list User 2
442178	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI379 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Hi at index 2 in list User 2
442179	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI379 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.HiHi at index 3 in list User 2
442180	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Lo at index 0 in list User 3
442181	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.LoLo at index 1 in list User 3
442182	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Hi at index 2 in list User 3
442183	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.HiHi at index 3 in list User 3
442184	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Lo at index 0 in list User 4
442185	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.LoLo at index 1 in list User 4
442186	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Hi at index 2 in list User 4
442187	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.HiHi at index 3 in list User 4
442188	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Lo at index 0 in list User 5
442189	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.LoLo at index 1 in list User 5
442190	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Hi at index 2 in list User 5
442191	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.HiHi at index 3 in list User 5
442192	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Lo at index 0 in list User 6
442193	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.LoLo at index 1 in list User 6
442194	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Hi at index 2 in list User 6
442195	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.HiHi at index 3 in list User 6
442196	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Lo at index 0 in list User 7
442197	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.LoLo at index 1 in list User 7
442198	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Hi at index 2 in list User 7
442199	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.HiHi at index 3 in list User 7
442200	2013.08.06.	11:04:29	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Lo at index 0 in list User 8
442201	2013.08.06.	11:04:30	7972	3320	Warning	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.LoLo at index 1 in list User 8
442202	2013.08.06.	11:04:30	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Hi at index 2 in list User 8
442203	2013.08.06.	11:04:30	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.HiHi at index 3 in list User 8
442204	2013.08.06.	11:04:30	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Lo at index 0 in list User 9
442205	2013.08.06.	11:04:30	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.LoLo at index 1 in list User 9
442206	2013.08.06.	11:04:30	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Hi at index 2 in list User 9
442207	2013.08.06.	11:04:30	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.HiHi at index 3 in list User 9
442208	2013.08.06.	11:04:32	7972	3320	Info	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.Lo at index 0 in list User 10
442209	2013.08.06.	11:04:34	7972	3320	Warning	AlarmGateway_001	AI380 Updating alarm LongNameAlarm_GenAlarms_001.AnalogAlarm1.LoLo at index 1 in list User 10

Message Details

No: 36442201 Date: 2013.08.06. Time: 11:04:30 Process ID: 7972 Thread ID: 3320 Log Flag: Warning

Message:
NewAE54 | --- New Alarm/Event Name LongNameAlarm_GenAlarms_001.AnalogAlarm1.LoLo Time 2013-08-06 11:04:27.428 Group F1 Type LoLo State UNACK_RTN

Alarm Name mentioned in messages AI379 and NewAE54 must match to function work properly.

UReason alarm system custom attributes

setUR_Source

Is used to set **UReason** alarm system alarm **Source** property.

Sample:

Following command sets UReason alarm parameter Source to 'SP200' for alarm Generator_001.Analog_001.Lo:

```
AlarmGateway_001.setURSource = Me.Tagname + ".Analog_001.Lo=SP200";
```

Message	Source	Sent
Analog_001(Lo)(AG)	SP200	2011.27.9 11:19:33
Analog_001(Lo)(AG)	SP200	2011.27.9 10:38:27
Analog_001(LoLo)(AG)	Generator_001	2011.27.9 10:33:37
Analog_001(Lo)(AG)	SP200	2011.27.9 10:33:37
Analog_001(LoLo)(AG)	Generator_001	2011.27.9 10:32:43
Analog_001(Lo)(AG)	SP200	2011.27.9 10:32:43
Analog_001(Lo)(AG)	Generator_001	2011.27.9 10:32:19
Invensys Remote is Active	External UConnect Connection	2011.27.9 10:23:27
Discharge_Pressure(ROCLo)(AG)	SP200	2011.22.9 13:41:44
GenAlarms_001.Discrete_001(DSC)(AG)	GenAlarms_001	2011.22.9 13:41:44
Discharge_Pressure(ROCLo)(AG)	SP200	2011.22.9 13:41:26
DP Decrease(AG)	SP200	2011.22.9 13:41:26
Intake P Decrease(AG)	SP200	2011.22.9 13:41:26
Discharge P Increase(AG)	SP200	2011.22.9 13:41:20
Analog_001(Lo)(AG)	SP200	2011.22.9 13:41:17
Analog_001(LoLo)(AG)	SP201	2011.22.9 13:41:17
Discharge_Pressure(ROCLo)(AG)	SP200	2011.22.9 13:41:08
Analog_001(HiHi)(AG)	SP202	2011.22.9 13:41:08
THP Decrease(AG)	SP200	2011.22.9 13:41:05
Analog_001(Hi)(AG)	SP202	2011.22.9 13:41:02
Discharge_Pressure(ROCLo)(AG)	SP200	2011.22.9 13:40:50
GenAlarms_001.Discrete_001(DSC)(AG)	GenAlarms_001	2011.22.9 13:40:47
Analog_001(Lo)(AG)	SP200	2011.22.9 13:40:20

setUR_Class

Is used to set **UReason** alarm system alarm **Type** property.

Note: Class is a critical parameter for UReason alarm system, all alarms/events that are intended for use in UReason alarm system must have defined valid class.

Sample:

Following command sets UReason alarm Class (Type) property to 'THP Decrease' for alarm Generator_001.Analog_001.Lo:

```
AlarmGateway_001.setURClass = Me.Tagname + ".Analog_001.Lo=THP Decrease";
```

The screenshot displays the 'All ESP Alarms (ESP Surveillance) [604]' window. It contains a table of alarm messages with columns for Message, Source, and Sent. Below the table, a detailed view of a 'THP Decrease Event' is shown. The event details include Source (SP200), Date (Tue Sep 27 11:19:33 EEST 2011), Severity (Warning), Type (THP Decrease), and Summary (Analog_001(Lo)(AG)). The 'Type' field is highlighted with a red box. At the bottom, there are tabs for Fault Tree, More Details, Annotations, Properties, Source Finder, and Associated To, along with action buttons like Acknowledge, Clear, Shelf, and Purge.

Message	Source	Sent
Analog_001(Lo)(AG)	SP200	2011.27.9 11:19:33
Analog_001(Lo)(AG)	SP200	2011.27.9 10:38:27
Analog_001(LoLo)(AG)	Generator_001	2011.27.9 10:33:37
Analog_001(Lo)(AG)	SP200	2011.27.9 10:33:37
Analog_001(LoLo)(AG)	Generator_001	2011.27.9 10:32:43
Analog_001(Lo)(AG)	SP200	2011.27.9 10:32:43

! THP Decrease Event

Source : SP200 Date : Tue Sep 27 11:19:33 EEST 2011 Ack : ☐

Severity : Warning Cleared : ☐

Type : THP Decrease Generated By : (NONE) Shelved : ☐

Summary : Analog_001(Lo)(AG)

Fault Tree | More Details | Annotations | Properties | Source Finder | Associated To

✓ Acknowledge ✕ Clear 📦 Shelf 🗑 Purge ✕

Association	Ack	Clr	Type	Message	TagId

setUR_Priority

Is used to set **UReason** alarm system alarm **Severity** property.

Sample:

Following command sets UReason alarm **Severity** property to 5 (Warning) for alarm Generator_001.Discrete_001:

```
AlarmGateway_001.setUR_Priority = Me.Tagname + ".Discrete_001=5";
```

Note: UReason alarm system has following alarm/event priorities:

- 1 - Critical
- 2 – High Severity
- 3 – Medium Severity
- 4 - Low Severity
- 5 - Warning
- 6 – Information

The screenshot displays the 'All ESP Alarms (ESP Surveillance) [604]' window. It features a table of alarms with columns for Message, Source, and Sent. Below the table, a detailed view of a 'THP Decrease Event' is shown. The 'Severity' field is highlighted with a red circle and set to 'Warning'. Other fields include Source (SP200), Date (Tue Sep 27 11:19:33 EEST 2011), Type (THP Decrease), and Summary (Analog_001(Lo)(AG)). The window also includes tabs for Fault Tree, More Details, Annotations, Properties, Source Finder, and Associated To, along with action buttons like Acknowledge, Clear, Shelf, and Purge.

Message	Source	Sent
Analog_001(Lo)(AG)	SP200	2011.27.9 11:19:33
Analog_001(Lo)(AG)	SP200	2011.27.9 10:38:27
Analog_001(LoLo)(AG)	Generator_001	2011.27.9 10:33:37
Analog_001(Lo)(AG)	SP200	2011.27.9 10:33:37
Analog_001(LoLo)(AG)	Generator_001	2011.27.9 10:32:43
Analog_001(Lo)(AG)	SP200	2011.27.9 10:32:43

! THP Decrease Event

Source : SP200 Date : Tue Sep 27 11:19:33 EEST 2011 Ack : ☐

Severity : Warning Cleared : ☐

Type : THP Decrease Generated By : (NONE) Shelved : ☐

Summary : Analog_001(Lo)(AG)

Fault Tree | More Details | Annotations | Properties | Source Finder | Associated To

✓ Acknowledge ✕ Clear 📦 Shelf 🗑 Purge ✕

Association	Ack	Clr	Type	Message	TagId

setUR_Source

Is used to set **UReason** alarm system alarm **Source** property.

Sample:

Following command sets UReason alarm **Source** property to Me.Tagname (Generator_001) value for alarm Generator_001.Analog_001.Lo:

```
AlarmGateway_001.setUR_Source = Me.Tagname + ".Analog_001.Lo=" + Me.Tagname;
```

The screenshot displays the 'All ESP Alarms (ESP Surveillance) [604]' window. It contains a table of alarms and a detailed view of a selected event.

Message	Source	Sent
Analog_001(Lo)(AG)	SP200	2011.27.9 11:19:33
Analog_001(Lo)(AG)	SP200	2011.27.9 10:38:27
Analog_001(LoLo)(AG)	Generator_001	2011.27.9 10:33:37
Analog_001(Lo)(AG)	SP200	2011.27.9 10:33:37
Analog_001(LoLo)(AG)	Generator_001	2011.27.9 10:32:43
Analog_001(Lo)(AG)	SP200	2011.27.9 10:32:43

! THP Decrease Event

Source : SP200 (highlighted with a red circle) **Date :** Tue Sep 27 11:19:33 EEST 2011 **Ack :** ☐

Severity : Warning **Cleared :** ☐

Type : THP Decrease **Generated By :** (NONE) **Shelved :** ☐

Summary : Analog_001(Lo)(AG)

Navigation tabs: Fault Tree | More Details | Annotations | Properties | Source Finder | **Associated To**

Actions: ☒ Acknowledge ☐ Clear ☐ Shelf ☐ Purge ☐ [Icon]

Association	Ack	Clr	Type	Message	TagId
-------------	-----	-----	------	---------	-------

setUR_MimicWindow

Is used to set **UReason** alarm system alarm **MimicWindow** property.

For details see **Alarm Gateway UReason Mimic functionality** section.

Sample:

Following command sets **UReason** alarm MimicWindow property:

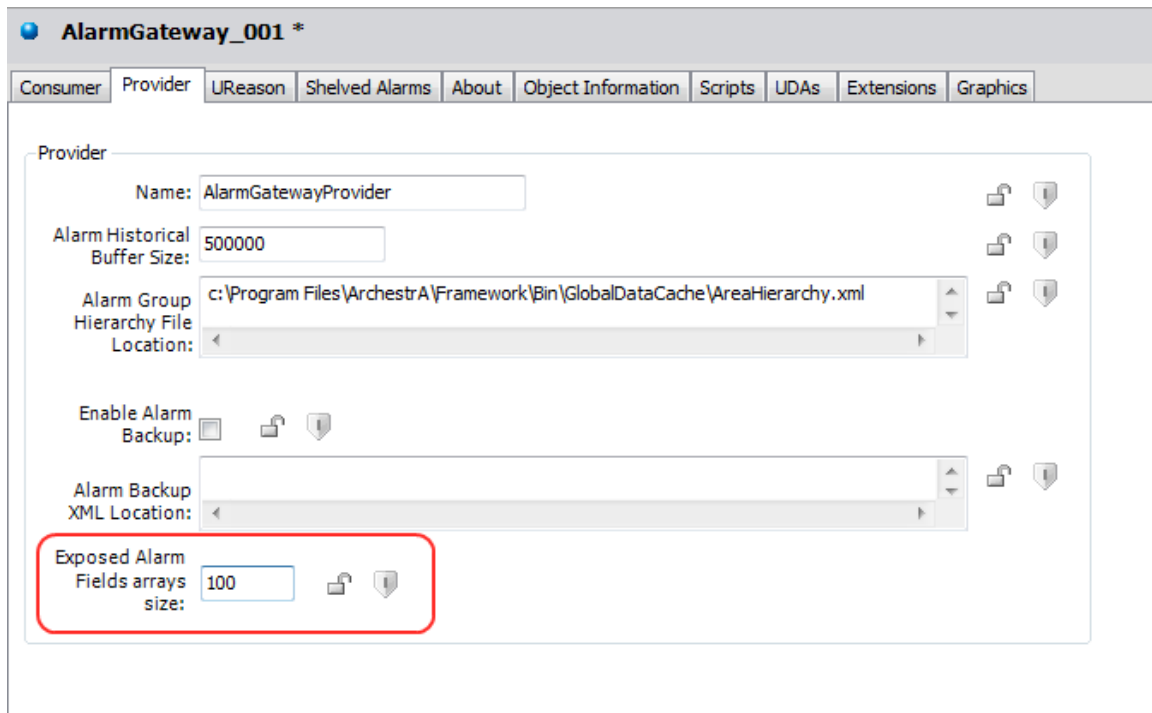
```
AlarmGateway_001.setUR_MimicWindow = Me.Tagname + ".Analog_001.Lo=SP200";
```

Exposed Alarm Fields

Exposed Alarm Field arrays are used to expose specific Alarm information (fields) as object attributes that can be used in WAS scripting.

Following configuration is needed to setup Exposed Alarm Fields:

- 1) In object editor open tab Provider
 - a) Enable Exposed Alarm Fields feature.
 - b) and set Exposed Alarm Fields arrays length:



- c) Delay **Alarm Gateway** object.
- d) Define exposed alarm configuration XML:

XML structure:

Root: `<AlarmConfiguration>`

Element:

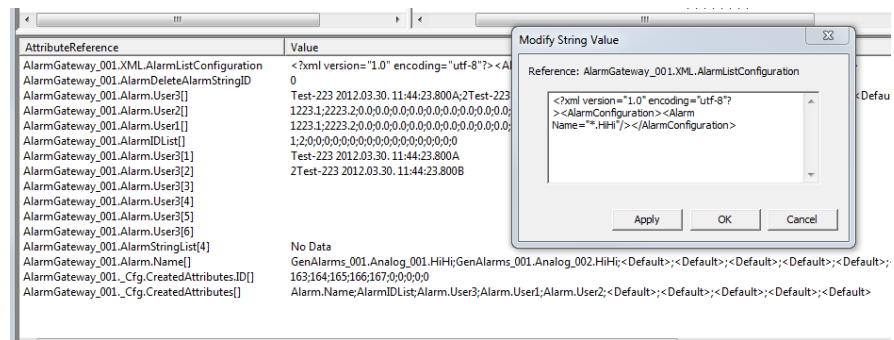
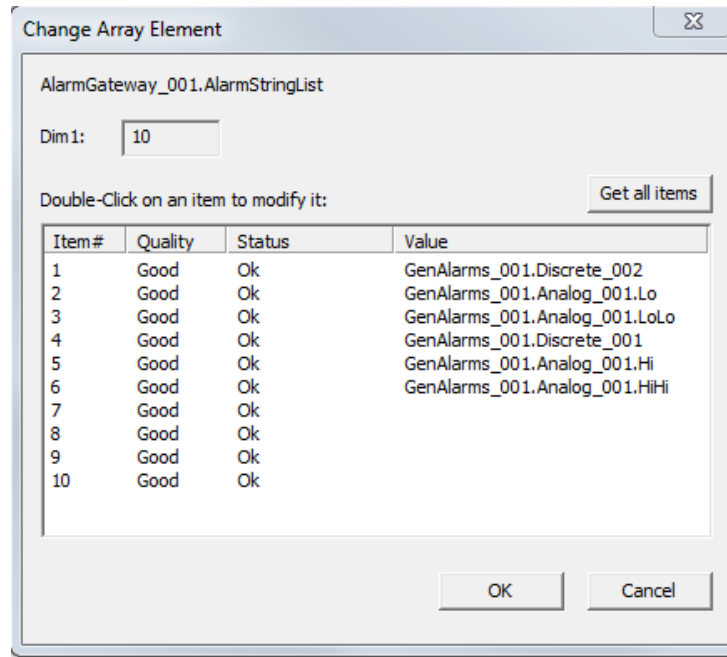
Name: Alarm

Attributes:

- Name – Alarm name – **alarm names are case sensitive.**
Note: Also wildcards are supported following samples are correct:

- 1) GenAlarm*

Adds to exposed list all Alarms that name starts with GenAlarm:



- 2) *HiHi - Adds to exposed list all Alarms that name ends with HiHi – all HiHi priority alarms.

Change Array Element

AlarmGateway_001.AlarmStringList

Dim1: 10

Double-Click on an item to modify it: Get all items

Item#	Quality	Status	Value
1	Good	Ok	GenAlarms_001.Analog_001.HiHi
2	Good	Ok	GenAlarms_001.Analog_002.HiHi
3	Good	Ok	
4	Good	Ok	
5	Good	Ok	
6	Good	Ok	
7	Good	Ok	
8	Good	Ok	
9	Good	Ok	
10	Good	Ok	

OK Cancel

3) *Value1.Lo*

Change Array Element

AlarmGateway_001.AlarmStringList

Dim1: 10

Double-Click on an item to modify it: Get all items

Item#	Quality	Status	Value
1	Good	Ok	GenAlarms_001.Analog_001.Lo
2	Good	Ok	GenAlarms_001.Analog_001.LoLo
3	Good	Ok	
4	Good	Ok	
5	Good	Ok	
6	Good	Ok	
7	Good	Ok	
8	Good	Ok	
9	Good	Ok	
10	Good	Ok	

OK Cancel

- ID – used defined ID -is used to delete entries from arrays by set value to **AlarmDeleteAlarmStringID** attribute.

```
<AlarmConfiguration>
  <Alarm Name="Alarm_300.Value1.Lolo" ID="10"/>
  <Alarm Name="Alarm1*" ID="11"/>
</AlarmConfiguration>
```

Note: For testing proposes in WAS following sample alarms are defined Analog_001 (LoLo,Lo,Hi,HiHi), Discreate_001, Discreate_002

e) set it to Alarm Gateway Big String **XML.AlarmListConfiguration** attribute.

f) When defined alarm raises

WAS Recent Alarms and Events (Historical):

TimeLCT	State	Type	Class	Priority	Name	
2012.03.27. 15:55:58	UNACK	Comm	SYSTEM	1	F1 from WinPlatform_001	F1
2012.03.27. 15:56:05	UNACK_RTN	Comm	SYSTEM	1	F1 from WinPlatform_001	F1
2012.03.27. 15:56:13	UNACK	Hi	VALUE	500	GenAlarms_001.Analog_001.Hi	F1
2012.03.27. 15:56:22	UNACK_RTN	Hi	VALUE	500	GenAlarms_001.Analog_001.Hi	F1
2012.03.27. 15:56:48	UNACK	Hi	VALUE	500	GenAlarms_001.Analog_001.Hi	F1
2012.03.27. 15:56:57	UNACK_RTN	Hi	VALUE	500	GenAlarms_001.Analog_001.Hi	F1
2012.03.27. 15:57:23	UNACK	Hi	VALUE	500	GenAlarms_001.Analog_001.Hi	F1
2012.03.27. 15:57:32	UNACK_RTN	Hi	VALUE	500	GenAlarms_001.Analog_001.Hi	F1
2012.03.27. 15:57:58	UNACK	Hi	VALUE	500	GenAlarms_001.Analog_001.Hi	F1
2012.03.27. 15:58:07	UNACK_RTN	Hi	VALUE	500	GenAlarms_001.Analog_001.Hi	F1

Displaying 1 to 11 of 303 alarms | Default | 100% Complete | Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

g) Exposed Alarm Field arrays are filled with defined Alarm Fields that are defined in **XML.AlarmListConfiguration** attribute:

The screenshot shows the 'AlarmGateway_001.AlarmStringList' configuration. A 'Change Array Element' dialog box is open, displaying a table of alarm fields. The table has columns: Item#, Quality, Status, and Value. The items are numbered 1 to 10, and their values are defined in the XML configuration.

Item#	Quality	Status	Value
1	Good	Ok	GenAlarms_001.Discrete_001
2	Good	Ok	GenAlarms_001.Analog_001.HiHi
3	Good	Ok	GenAlarms_001.Discrete_002
4	Good	Ok	GenAlarms_001.Analog_001.Hi
5	Good	Ok	GenAlarms_001.Analog_001.LoLo
6	Good	Ok	GenAlarms_001.Analog_001.Lo
7	Good	Ok	
8	Good	Ok	
9	Good	Ok	
10	Good	Ok	

The XML configuration for the alarm fields is shown below:

```
<?xml version="1.0" encoding="utf-8"?>
<AlarmConfiguration>
  <Alarm Name="GenAlarms_001.Analog_001.HiHi" ID="10"/>
  <Alarm Name="log" ID="10"/>

```

Configuration attributes

XML.AlarmListConfiguration

Stores Alarm XML configuration

XML sample:

```
<AlarmConfiguration>
  <Alarm Name="*.HiHi" ID ="10"/>
</AlarmConfiguration>
```

Sample WAS script:

```
AlarmGateway_001.XML.AlarmListConfiguration =
"<AlarmConfiguration>" +
"<Alarm Name="\"*.HiHi\"" ID =\"10\"/>" +
"</AlarmConfiguration>";
```

AlarmIDList

dataType: int array

Array size: is defined in editor **Exposed_Alarm_Fields_Arrays_Size** attribute.

Description:

Array of Alarm Gateway generated exposed alarm unique ID that can be used to identify each exposed alarm.

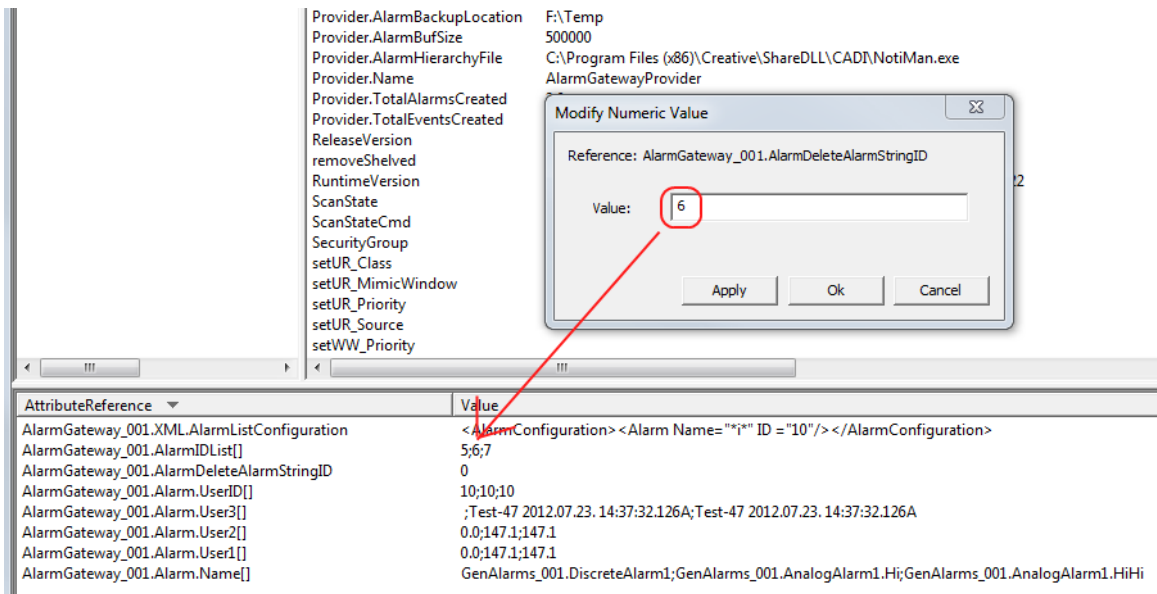
AttributeReference	Value
AlarmGateway_001.XML.AlarmListConfiguration	<AlarmConfiguration> <Alarm Name="*" ID ="10"/> </AlarmConfiguration>
AlarmGateway_001.AlarmIDList[]	5;6;7
AlarmGateway_001.AlarmDeleteAlarmStringID	0
AlarmGateway_001.Alarm.UserID[]	10;10;10
AlarmGateway_001.Alarm.User3[]	;Test-47 2012.07.23. 14:37:32.126A;Test-47 2012.07.23. 14:37:32.126A
AlarmGateway_001.Alarm.User2[]	0.0;147.1;147.1
AlarmGateway_001.Alarm.User1[]	0.0;147.1;147.1
AlarmGateway_001.Alarm.Name[]	GenAlarms_001.DiscreteAlarm1;GenAlarms_001.AnalogAlarm1.Hi;GenAlarms_001.AnalogAlarm1.HiHi

AlarmDeleteAlarmStringID

dataType: int

Description:

Deletes entry from Exposed Alarm Fields that matches specified alarm ID in array **AlarmIDList**.



Alarm.UserID

dataType: int array

Description:

Displays User defined ID from Alarm list configuration (attribute XML.AlarmListConfiguration) file Alarm node attribute **ID**

```
<AlarmConfiguration>
  <Alarm Name="*.HiHi" ID="10"/>
</AlarmConfiguration>
```

[illegible]

Exposed attributes

Alarm.Name

dataType: string array

Description: Exposed alarm name

[illegible]

Alarm.User1

dataType: string array

Array size: is defined in editor **Exposed_Alarm_Fields_Arrays_Size** attribute.

Description: Exposes Alarm field User1

[illegible]

Custom Acked alarm comment field

Overview

Using Alarm gateway is possible to configure custom Acked alarm comment field for Acked alarms this is useful if alarm descriptions are used:

The screenshot shows the configuration window for \$GenAlarms. The 'Field Attributes' tab is active. On the left, a list of field attributes shows 'AnalogAlarm1' selected. The main configuration area for 'AnalogAlarm1' is on the right. The 'Description' field is highlighted with a red circle and contains the text 'AnalogAlarm1 Description'. Other visible settings include: Name: AnalogAlarm1, Access mode: InputOutput, Category: User writeable, Attribute type: Analog, Data type: Integer, Value: 0, Value deadband: 0.0, Engineering units: (empty), Input source: Me.int_AlarmGen, Output destination: Me.int_AlarmGen, and checkboxes for 'Enable I/O scaling', 'Enable history', and 'Enable limit alarms'.

Alarm description is stored in AlarmComment field:

The screenshot shows the 'WAS Current Alarms (Summary)' window. It displays a table of alarms. The first row is highlighted, showing the alarm 'GenAlarms_001.AnalogAlarm1.Lo' with the comment 'AnalogAlarm1 Description'. Below the table, there are tabs for 'AEP Summary Alarms', 'AEP Historical Alarms', and 'Alarms & Events'. The 'Alarms & Events' tab is selected, showing a detailed view of the alarm with fields for Name, AlarmComment, User3, State, and Type. The AlarmComment field is highlighted.

Name	AlarmComment	Group	Node	Provider	L
GenAlarms_001.AnalogAlarm1.Lo	AnalogAlarm1 Description	F1	grpc2	galaxy	2

Name	AlarmComment	User3	State	Type	C
GenAlarms_001.AnalogAlarm1.Lo	AnalogAlarm1 Description	User3	UNACK	Lo	V.

If alarm is Aacked by default AlarmComment value is overwritten by alarm comment value:

WAS Current Alarms (Summary): \Galaxy!F1					
Name	AlarmComment	Group	Node	Provider	L
GenAlarms_001.AnalogAlarm1.Lo	Std ACK - was Acked	F1	grpc2	galaxy	2

Displaying 1 to 1 of 1 alarms	Default	100% Complete	Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius
-------------------------------	---------	---------------	---

AEP Summary Alarms	AEP Historical Alarms	Alarms & Events
--------------------	-----------------------	-----------------

AEP Current Alarms (Summary): \\195.2.103.13\AlarmGatewayProvider!F1 \\195.2.103.13\AlarmGatewayProvider!URReason					
Name	AlarmComment	User3	State	Type	C
GenAlarms_001.AnalogAlarm1.Lo	Std ACK - was Acked		ACK	Lo	V.

Displaying 1 to 1 of 1 alarms	Default	100% Complete	Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius
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With Alarm Gateway is possible to configure different Alarm field to store Ack comment and preserve Alarm description.

Configuration

Editor

Custom alarm Ack comment field feature can be configured in tab **Provider** section

Custom Aacked Alarm Field:

AlarmGateway_001 *

Consumer Provider URReason Shelved Alarms Log Flags About License Server Object Information Scripts UDAs E

Provider

Name: AlarmGatewayProvider

Alarm Historical Buffer Size: 500000

Alarm Group Hierarchy File Location: c:\Program Files\ArchestrA\Framework\Bin\GlobalDataCache\AreaHierarchy...

Enable Alarm Backup: ☐

Alarm Backup XML Location:

Exposed Alarm Fields arrays size: 20

Custom Aacked Alarm Field

Enable Custom Aacked alarm field: ☒

Custom Aacked alarm Field: AckOpNode

Alarm Ack comment will be displayed in connected Alarm Gateway clients and Alarm Gateway alarm source provider (consumer configured in Consumer tab). In field AckOpNode

Runtime

Custom alarm Acked comment field is possible to configure in runtime without Alarm gateway restart:

AlarmGateway.LastErrorMessage

AlarmGateway.Restart

AlarmGateway.Started

AlarmGateway.UseAlarmIncCounter

AlarmIDList

AlarmInhibit

AlarmMode

AlarmModeCmd

Area

ConfigVersion

Consumer.AlarmQuery

Consumer.FromPriority

Consumer.QueryType

Consumer.QueryTypeEnum

Consumer.Status

Consumer.ToPriority

ContainedName

Container

CustomAckAlarmField

CustomAckAlarmFieldEnum

CustomAttributesListSize

false

true

true

false

Modify Custom Enum Value

Reference: AlarmGateway_001.CustomAckAlarmField

Value: User3

Ordinal: AckOprDomain

Primitive Id: AckOprNode

Attribute Id: 181

Apply

OK

Cancel

AttributeReference	Value
AlarmGateway_001.CustomAckAlarmField	User3
AlarmGateway_001.EnableCustomAckField	true

Attributes

EnableCustomAckField

Datatype: bool

Description: enables/disables Custom alarm Ack comment field feature.

If true - Custom alarm Ack comment field feature is enabled and Acked alarm comment is written in configured field in attribute CustomAckAlarmField

If false - Custom alarm Ack comment field feature is disabled and default Alarm system functionality is used Ack comment overwrites field **AlarmComment**.

CustomAckAlarmField

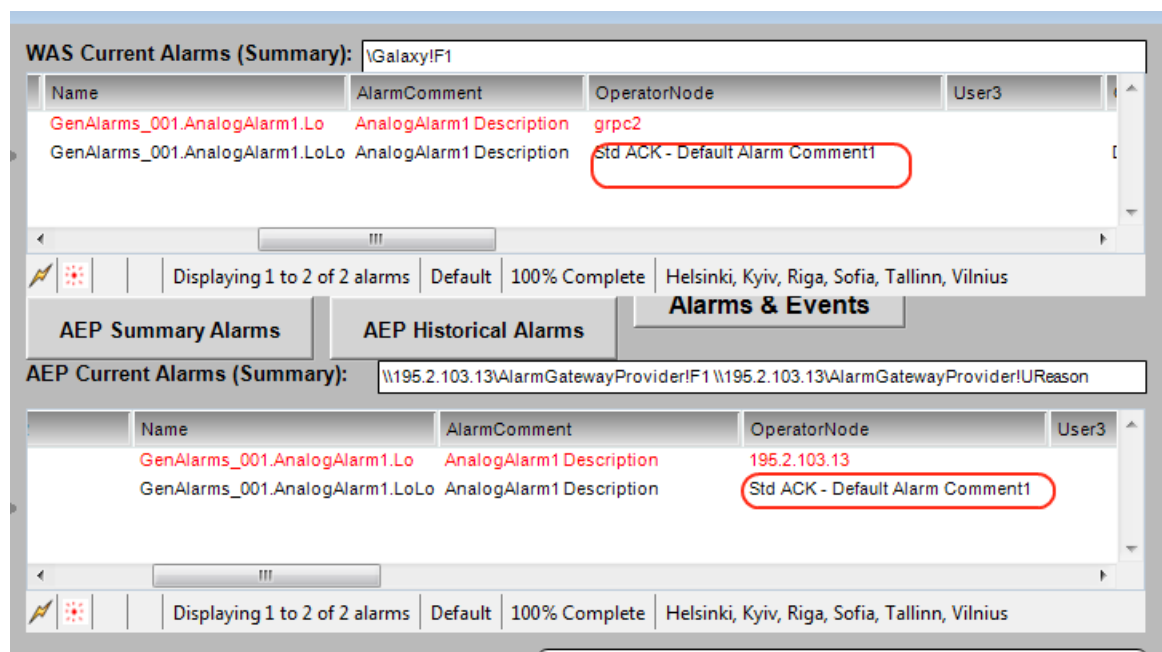
Datatype: Enum

Description: Defines custom Alarm Ack field.

Following custom Alarm Ack Comment field are possible to configure:

- **AckOprNode**

Alarm Ack comment will be displayed in connected Alarm Gateway clients and Alarm Gateway alarm source provider (consumer configured in Consumer tab). In field **AckOprNode**:



- **User3**

Alarm Ack comment will be displayed in connected Alarm Gateway clients only, in field **User3**:

WAS Current Alarms (Summary): \Galaxy!F1

Type	Class	Priority	Name	AlarmComment	Op
Lo	VALUE	500	GenAlarms_001.AnalogAlarm1.Lo	AnalogAlarm1 Description	

Displaying 1 to 1 of 1 alarms | Default | 100% Complete | Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

Alarms & Events

AEP Summary Alarms | **AEP Historical Alarms**

AEP Current Alarms (Summary): \\195.2.103.13\AlarmGatewayProvider!F1 \\195.2.103.13\AlarmGatewayProvider!UReason

Name	AlarmComment	User3	Op
GenAlarms_001.AnalogAlarm1.Lo	AnalogAlarm1 Description	Std ACK - Default Alarm Comment1	

Displaying 1 to 1 of 1 alarms | Default | 100% Complete | Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

Note: WAS alarm provider will only Ack alarm without changing AlarmComment.

- **AckOprDomain**

Alarm Ack comment will be displayed in connected Alarm Gateway clients only, in field **OperatorDomain**:

WAS Current Alarms (Summary): \Galaxy!F1

Priority	Name	AlarmComment	OperatorDomain	OperatorNode
500	GenAlarms_001.AnalogAlarm1.Lo	AnalogAlarm1 Description	ArchestrA	
500	GenAlarms_001.AnalogAlarm1.LoLo	AnalogAlarm1 Description	ArchestrA	

Displaying 1 to 2 of 2 alarms | Default | 100% Complete | Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

Alarms & Events

AEP Summary Alarms | **AEP Historical Alarms**

AEP Current Alarms (Summary): \\195.2.103.13\AlarmGatewayProvider!F1 \\195.2.103.13\AlarmGatewayProvider!UReason

Name	AlarmComment	OperatorDomain	User3
GenAlarms_001.AnalogAlarm1.Lo	AnalogAlarm1 Description		Std AC
GenAlarms_001.AnalogAlarm1.LoLo	AnalogAlarm1 Description	Std ACK - Default Alarm Comment1	

Displaying 1 to 2 of 2 alarms | Default | 100% Complete | Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

Note: WAS alarm provider will only Ack alarm without changing AlarmComment.

- **AckOprName**

Alarm Ack comment will be displayed in connected Alarm Gateway clients only, in field **OperatorName**:

WAS Current Alarms (Summary): \Galaxy!F1

Priority	Name	AlarmComment	Operator	OperatorDomain	O
500	GenAlarms_001.AnalogAlarm1.Hi	AnalogAlarm1 Description	DefaultUser	ArchestraA	

Displaying 1 to 1 of 1 alarms | Default | 100% Complete | Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

Alarms & Events

AEP Summary Alarms | **AEP Historical Alarms**

AEP Current Alarms (Summary): \\195.2.103.13\AlarmGatewayProvider!F1 \\195.2.103.13\AlarmGatewayProvider!URReason

Name	AlarmComment	Operator	OperatorDomain
GenAlarms_001.AnalogAlarm1.Hi	AnalogAlarm1 Description	Std ACK - Default Alarm Comment1	

Displaying 1 to 1 of 1 alarms | Default | 100% Complete | Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

Note: WAS alarm provider will only Ack alarm without changing AlarmComment.

- **AckOprFullName**

Alarm Ack comment will be displayed in connected Alarm Gateway clients only, in field **OperatorFullName**:

WAS Current Alarms (Summary): \Galaxy!F1

Priority	Name	AlarmComment	OperatorFullName	Operator
500	GenAlarms_001.AnalogAlarm1.Hi	AnalogAlarm1 Description		DefaultUser
500	GenAlarms_001.AnalogAlarm1.HiHi	AnalogAlarm1 Description		DefaultUser

Displaying 1 to 2 of 2 alarms | Default | 100% Complete | Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

Alarms & Events

AEP Summary Alarms | **AEP Historical Alarms**

AEP Current Alarms (Summary): \\195.2.103.13\AlarmGatewayProvider!F1 \\195.2.103.13\AlarmGatewayProvider!URReason

r2	Name	AlarmComment	OperatorFullName	Operator
	GenAlarms_001.AnalogAlarm1.Hi	AnalogAlarm1 Description		Std AC
	GenAlarms_001.AnalogAlarm1.HiHi	AnalogAlarm1 Description	Std ACK - Default Alarm Comment1	

Displaying 1 to 2 of 2 alarms | Default | 100% Complete | Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

Note: WAS alarm provider will only Ack alarm without changing AlarmComment.

UReason gateway

Alarm Gateway Object provides functionality to send/receive alarms to/from Wonderware alarming system from/to UReason alarming system. The following functionality are supported:

1. Send new and acknowledged alarms to UReason alarm system.
2. UReason functionality to show Mimic InTouch windows.
3. UReason Shelved alarms functionality.
4. Acknowledge Wonderware alarms from UReason alarm system.

The following configuration is required for UReason gateway functionality:

AlarmGateway_001 *

General | UReason | About | Object Information | Scripts | UDAs | Extensions | Graphics

Enable gateway to UReason alarming system: ☒  

Alarm server

IPAddress:	192.168.181.158		
Port:	61616		
User:	UReasonUser		
Password:	*****		
Remote Name:	OASYSAM.ESPEventPublisher		
Mimic.Path.ID1:	OASYSAM.ESPConsole1Request		
Mimic.Path.ID2:	OASYSAM.ESPConsole2Request		

Local

Name:	NET.ESPEventPublisher		
Port:	61617		

Please, refer to UReason documentation for more information about UReason alarming system.

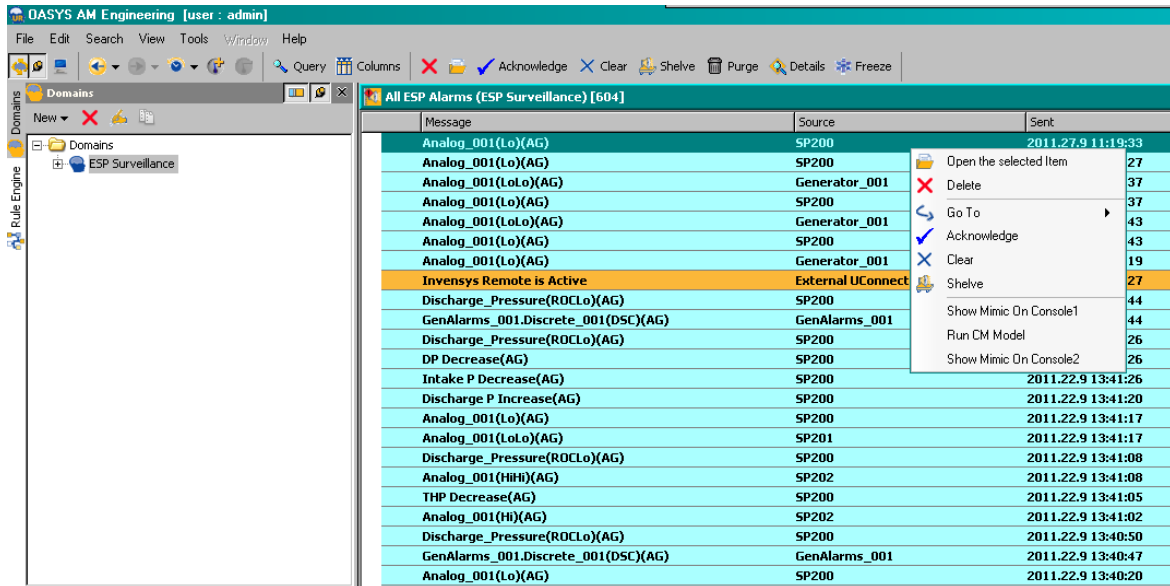
Alarm Gateway UReason Mimic functionality

Alarm gateway supports UReason Mimic functionality.

Following object attributes are used for Console1 and Console2:

- AlarmGateway_001.UReason.Mimic.Path.Console1
If user selects “Show Mimic On Console1” from UReason alarm menu, this attribute is changed to UReason Source value (for Alarm Analog_001.Lo it is SP200, see picture below).
- AlarmGateway_001.UReason.Mimic.Path.Console2

If user selects “Show Mimic On Console2” from UReason alarm menu, this attribute is changed to UReason Source value (for Alarm Analog_001.Lo it is SP200 see picture below).



Mimic functionality can be used for opening specific InTouch windows that are tied to UReason alarm by the Source value.

Sample InTouch script:

```
IF Galaxy:AlarmGateway_001.UReason.Mimic.Path.Console1 <> "" THEN
```

```
    Show Galaxy:AlarmGateway_001.UReason.Mimic.Path.Console1;
```

```
    Galaxy:AlarmGateway_001.UReason.Mimic.Path.Console1="";
```

```
    Console="Console 1";
```

```
ENDIF;
```

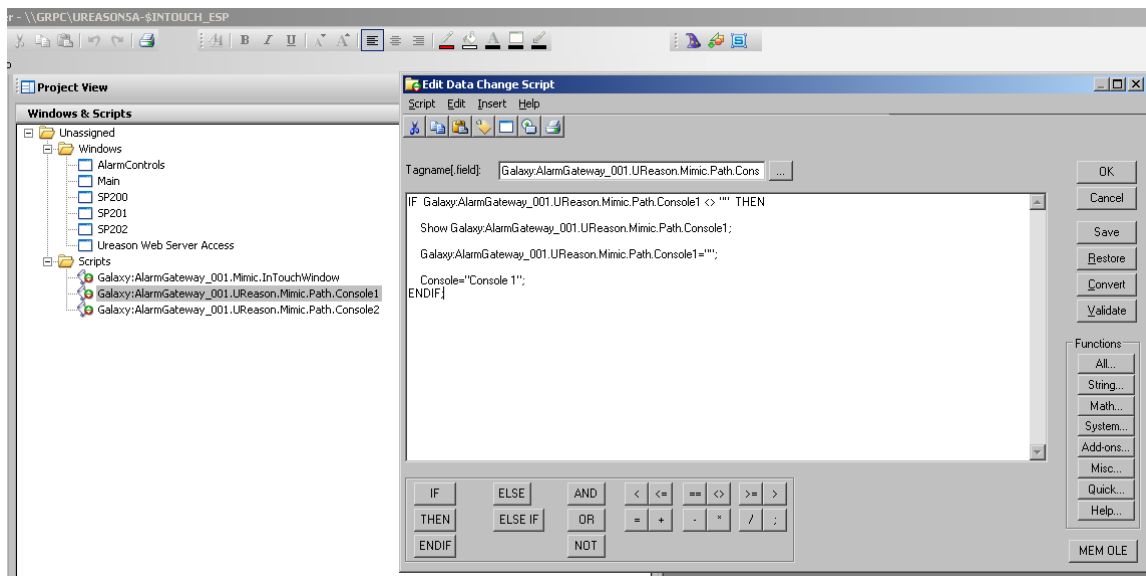
```
IF Galaxy:AlarmGateway_001.UReason.Mimic.Path.Console2 <> "" THEN
```

```
    Show Galaxy:AlarmGateway_001.UReason.Mimic.Path.Console2;
```

```
    Galaxy:AlarmGateway_001.UReason.Mimic.Path.Console2="";
```

```
    Console="Console 2";
```

```
ENDIF;
```



Mimic functionally without UReason alarming system

For Alarm Gateway UReason Mimic functionality only for Wonderware alarm system (without UReason), the following string attributes are needed:

- **AlarmGateway_001.Mimic.Alarmname** – input AlarmName from provider alarms list (max length 32 characters)
Sample: SP200.Intake_Pressure_Decrease
- **AlarmGateway_001.Mimic.InTouchWindow** - returns default (WAS object name) or user-defined (set in **setSource** attribute) value, e.g. SP200

Sample script:

InTouch data change script Galaxy:AlarmGateway_001.Mimic.InTouchWindow

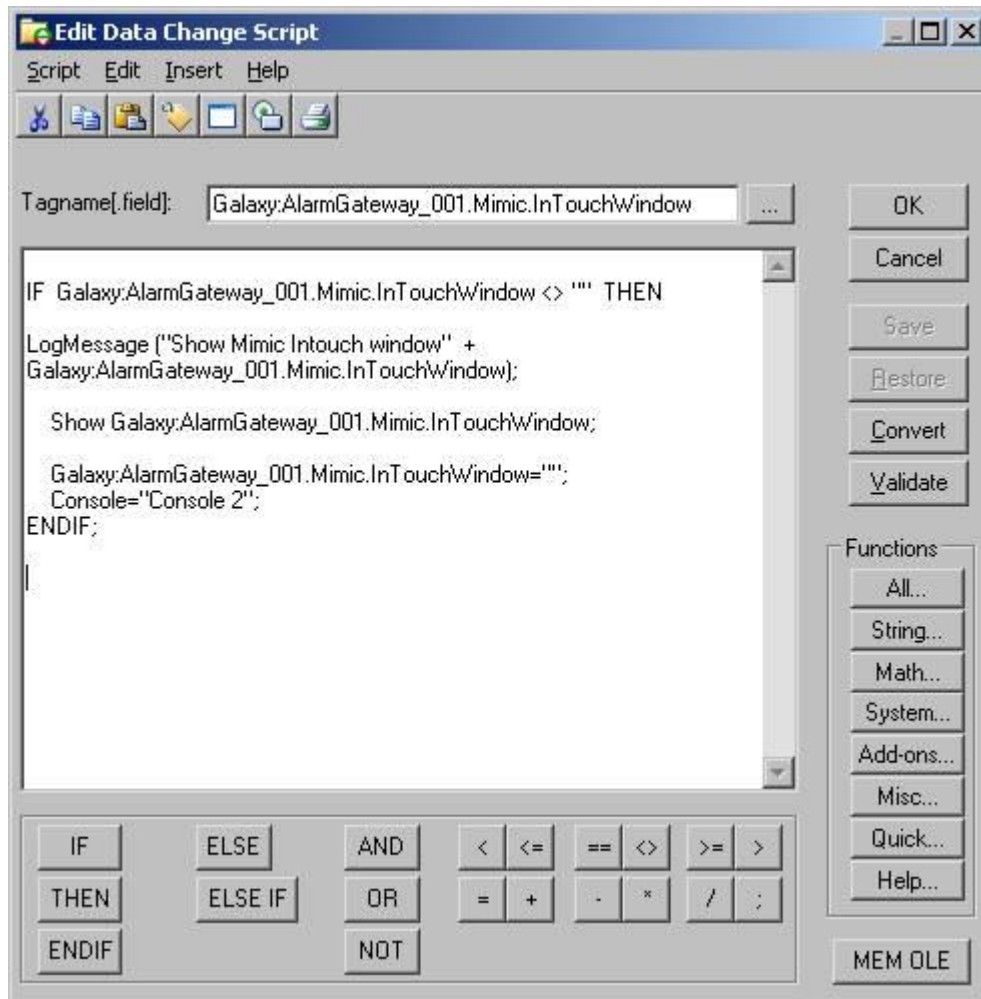
IF Galaxy:AlarmGateway_001.Mimic.InTouchWindow <> "" THEN

LogMessage ("Show Mimic Intouch window" +
Galaxy:AlarmGateway_001.Mimic.InTouchWindow);

 Show Galaxy:AlarmGateway_001.Mimic.InTouchWindow;

 Galaxy:AlarmGateway_001.Mimic.InTouchWindow="";
 Console="Console 2";

ENDIF;



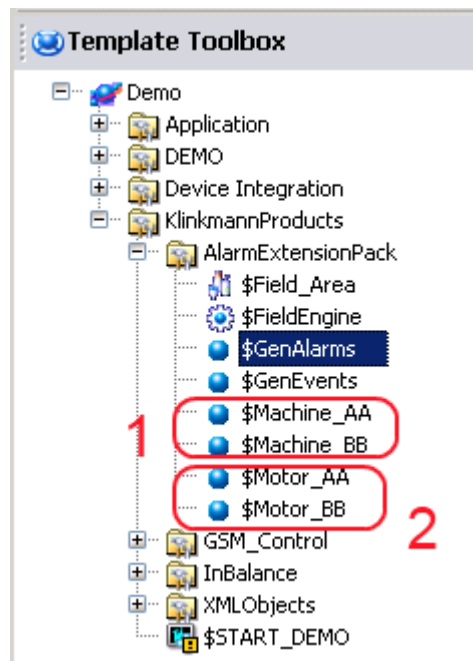
Multiple distributed Alarm Gateway configuration setup sample

In high load WAS solutions where total alarm exceeds several hundreds or thousands and additional high CPU load features like **Wonderware alarm system custom attributes** are used, it is highly recommended to use several Alarm Gateway object instances to avoid object overload.

Following sample is for two Alarm Gateway instances.

Object configuration

- 1) Define template/instance sets for each Alarm Gateway instance, let's assume we are planning to use 2 Alarm Gateway instances (**AlarmGateway_001** and **AlarmGateway_002**):
 - a) For **AlarmGateway_001**
Define templates: **\$Machine_AA** and **\$Machine_BB**
 - b) For **AlarmGateway_002**
Define templates: **\$Motor_AA** and **\$Motor_BB**



- 2) Edit template (**\$Machine_AA** and **\$Machine_BB**) scripts to point to assigned object **AlarmGateway_001**

```

' test 2 set new priority each 10 sec
if(Me.SimCustomAttributes == true) THEN

if(Me.iCounter > 999) THEN
    Me.iCounter = 1; ' reset
ELSE
    Me.iCounter = Me.iCounter + 1;
ENDIF;
' User1
AlarmGateway_001.setWW_User1 = Me.Tagname + ".AnalogAlarm1.Lo=1"+ Me.iCounter+ ",1";
AlarmGateway_001.setWW_User1 = Me.Tagname + ".AnalogAlarm1.LoLo=1"+ Me.iCounter+ ",1";
AlarmGateway_001.setWW_User1 = Me.Tagname + ".AnalogAlarm1.Hi=1"+ Me.iCounter+ ",1";
AlarmGateway_001.setWW_User1 = Me.Tagname + ".AnalogAlarm1.HiHi=1"+ Me.iCounter+ ",1";
' User2
AlarmGateway_001.setWW_User2 = Me.Tagname + ".AnalogAlarm1.Lo=1"+ Me.iCounter+ ",1";
AlarmGateway_001.setWW_User2 = Me.Tagname + ".AnalogAlarm1.LoLo=1"+ Me.iCounter+ ",1";
AlarmGateway_001.setWW_User2 = Me.Tagname + ".AnalogAlarm1.Hi=1"+ Me.iCounter+ ",1";
AlarmGateway_001.setWW_User2 = Me.Tagname + ".AnalogAlarm1.HiHi=1"+ Me.iCounter+ ",1";
' User3
AlarmGateway_001.setWW_User3 = Me.Tagname +
".Analog_001.Lo=Test-"+ Me.iCounter+ " "+ System.DateTime.Now + "A";
AlarmGateway_001.setWW_User3 = Me.Tagname + ".AnalogAlarm1.LoLo=Test-"+ Me.iCounter+ " "
+ System.DateTime.Now + "A";
AlarmGateway_001.setWW_User3 = Me.Tagname + ".AnalogAlarm1.Hi=Test-"+ Me.iCounter+ " "+
System.DateTime.Now + "A";
AlarmGateway_001.setWW_User3 = Me.Tagname + ".AnalogAlarm1.HiHi=Test-"+ Me.iCounter+ " "
+ System.DateTime.Now + "A";

```

3) Edit template (\$Motor_AA and \$Motor_BB) scripts to point to assigned object AlarmGateway_002

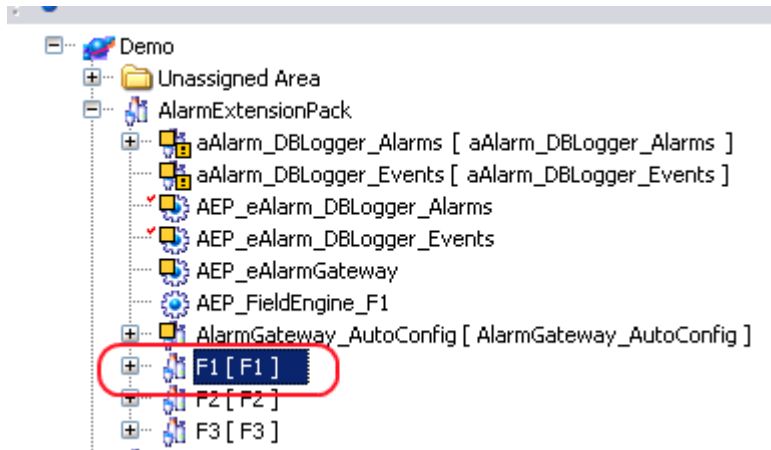
```

' test 2 set new priority each 10 sec
if(Me.SimCustomAttributes == true) THEN

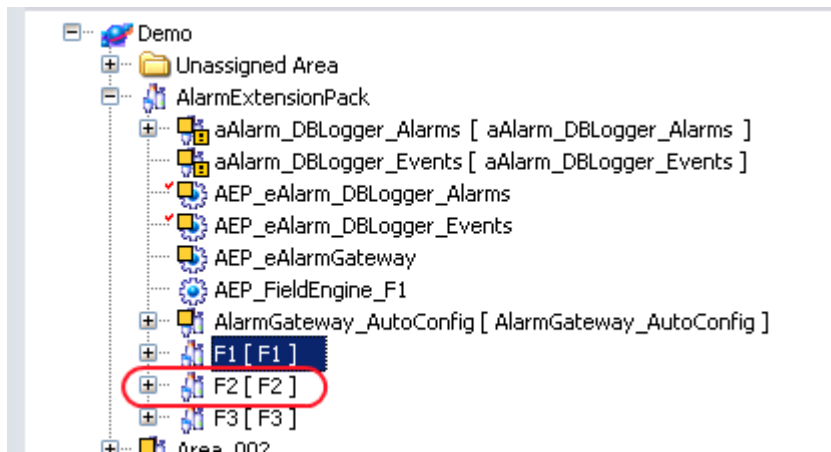
if(Me.iCounter > 999) THEN
    Me.iCounter = 1; ' reset
ELSE
    Me.iCounter = Me.iCounter + 1;
ENDIF;
' User1
AlarmGateway_002.setWW_User1 = Me.Tagname + ".AnalogAlarm1.Lo=1"+ Me.iCounter+ ",1";
AlarmGateway_002.setWW_User1 = Me.Tagname + ".AnalogAlarm1.LoLo=1"+ Me.iCounter+ ",1";
AlarmGateway_002.setWW_User1 = Me.Tagname + ".AnalogAlarm1.Hi=1"+ Me.iCounter+ ",1";
AlarmGateway_002.setWW_User1 = Me.Tagname + ".AnalogAlarm1.HiHi=1"+ Me.iCounter+ ",1";
' User2
AlarmGateway_002.setWW_User2 = Me.Tagname + ".AnalogAlarm1.Lo=1"+ Me.iCounter+ ",1";
AlarmGateway_002.setWW_User2 = Me.Tagname + ".AnalogAlarm1.LoLo=1"+ Me.iCounter+ ",1";
AlarmGateway_002.setWW_User2 = Me.Tagname + ".AnalogAlarm1.Hi=1"+ Me.iCounter+ ",1";
AlarmGateway_002.setWW_User2 = Me.Tagname + ".AnalogAlarm1.HiHi=1"+ Me.iCounter+ ",1";
' User3
AlarmGateway_002.setWW_User3 = Me.Tagname +
".Analog_001.Lo=Test-"+ Me.iCounter+ " "+ System.DateTime.Now + "A";
AlarmGateway_002.setWW_User3 = Me.Tagname + ".AnalogAlarm1.LoLo=Test-"+ Me.iCounter+ " "
+ System.DateTime.Now + "A";
AlarmGateway_002.setWW_User3 = Me.Tagname + ".AnalogAlarm1.Hi=Test-"+ Me.iCounter+ " "+
System.DateTime.Now + "A";
AlarmGateway_002.setWW_User3 = Me.Tagname + ".AnalogAlarm1.HiHi=Test-"+ Me.iCounter+ " "
+ System.DateTime.Now + "A";

```

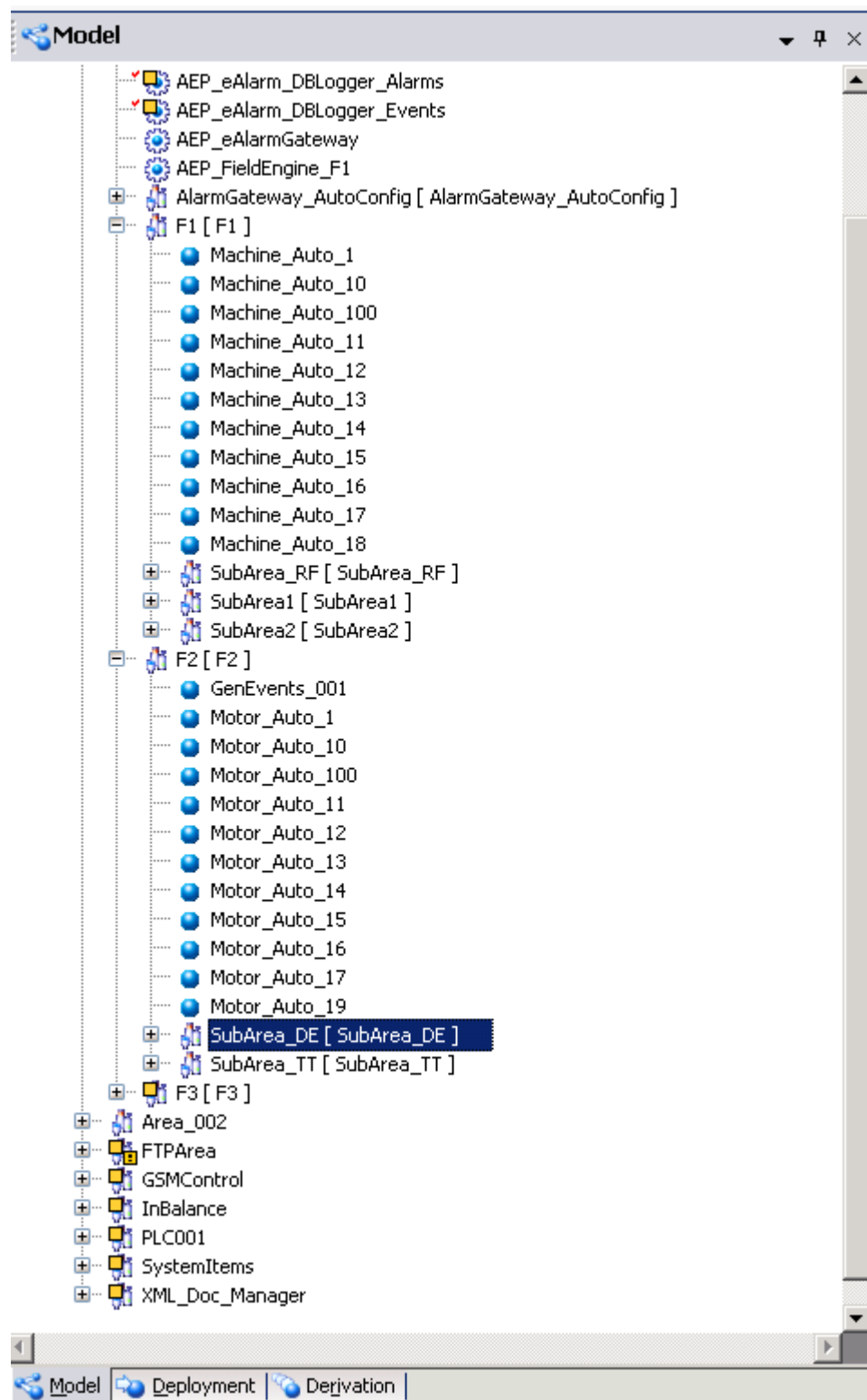
4) Create Area object F1 area that will be used to all first set objects (\$Machine_AA and \$Machine_BB)



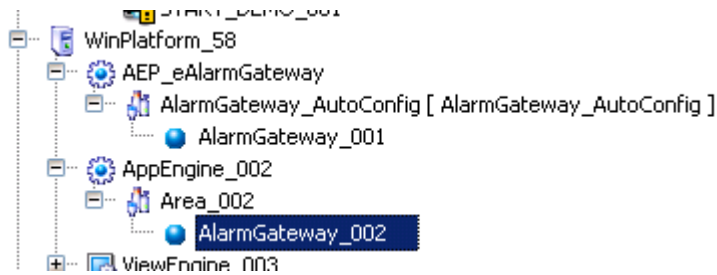
- 5) Create Area object **F2** area that will be used to all second set objects (\$**Motor_AA** and \$ **Motor_BB**)



- 6) Create instances and deploy for both sets. Sample:

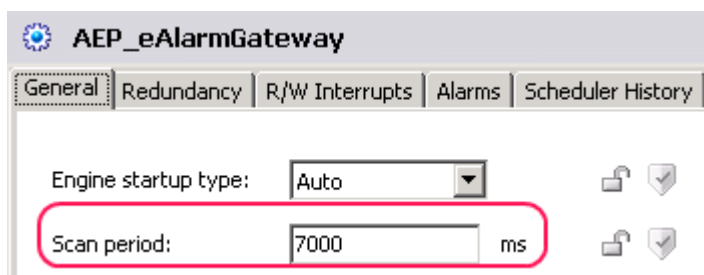


7) Create separate engines and Areas for each Alarm Gateway object instance:



Note: Separate engine for each Alarm Gateway is **must have** requirement since each engine creates a separate process and that allows to distribute load between multiple CPU cores.

8) Set both engines Scan period to 7000 ms.

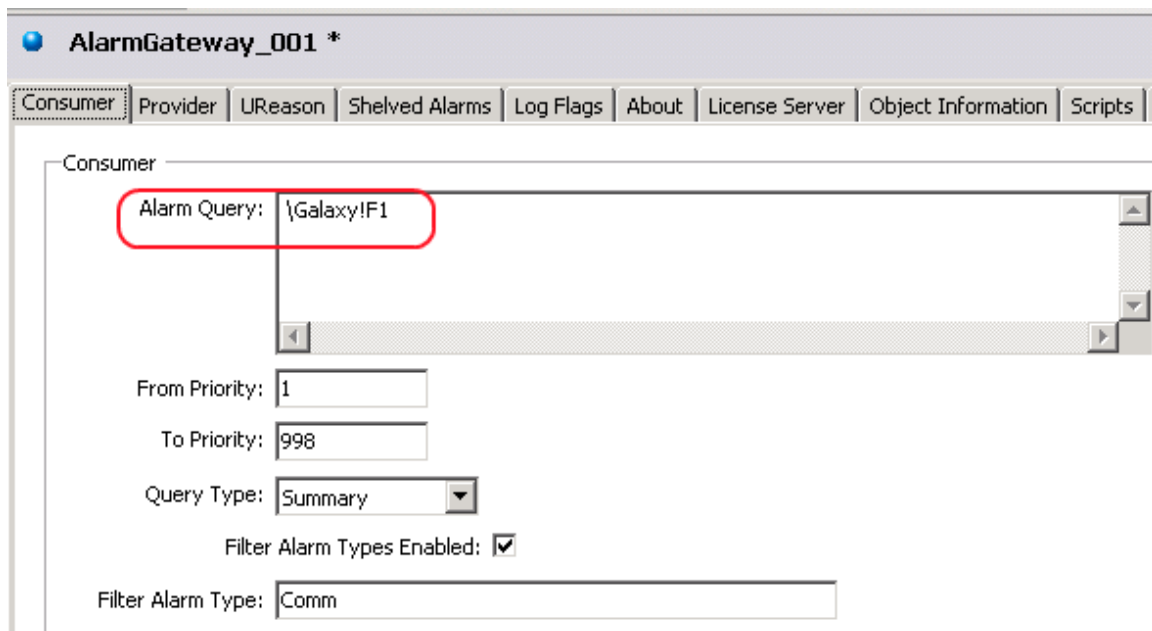


9) Configure both Instances of Alarm Gateway:

a. AlarmGateway_001

Alarm Query: **\Galaxy!F1**

Provider name: **AlarmGatewayProvider1**



AlarmGateway_001 *

Consumer | **Provider** | UReason | Shelved Alarms | Log Flags | About | License Server | Object Information | Scripts | UDAs

Provider

Name:

Alarm Historical Buffer Size:

Alarm Group Hierarchy File Location:

- a. AlarmGateway_002
 Alarm Query: **\Galaxy!F2**
 Provider name: **AlarmGatewayProvider2**

AlarmGateway_002 *

Consumer | Provider | UReason | Shelved Alarms | Log Flags | About | License Server | Object Information | Scripts | UDAs

Consumer

Alarm Query:

From Priority:

To Priority:

Query Type:

Filter Alarm Types Enabled: ☒

Filter Alarm Type:

AlarmGateway_002 *

Consumer | **Provider** | UReason | Shelved Alarms | Log Flags | About | License Server | Object Information | Scripts | UDAs

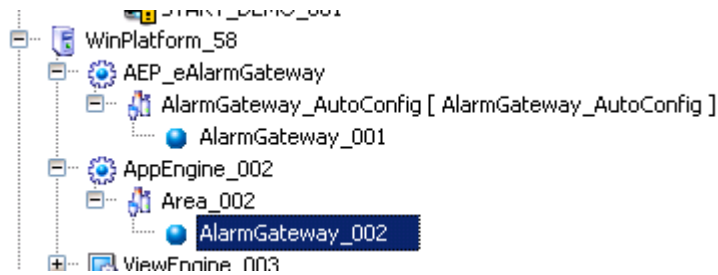
Provider

Name:

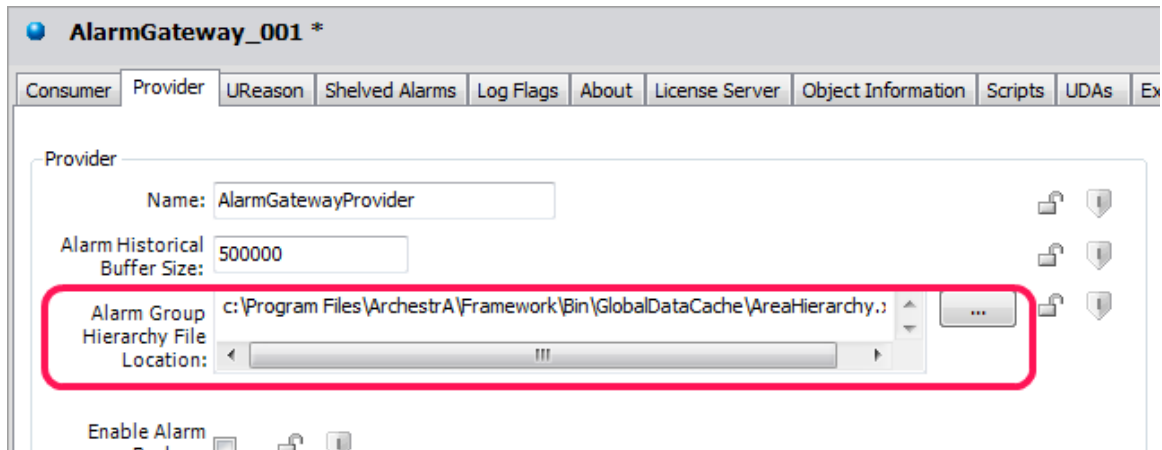
Alarm Historical Buffer Size:

Alarm Group Hierarchy File Location:

10) Deploy both instances of alarm Gateway



Note: if Area hierarchy is changed (new area is added or existing is moved) is required to redeploy AlarmGateway instance to update **Alarm Group Hierarchy File** information.



Alarm client configuration

To access of both AlarmGateway instances set following Alarm query in AlarmClient:

\\Hostname\AlarmGatewayProvider1!F1 \\Hostname\AlarmGatewayProvider2!F2

Edit Animations - English (United States)

Animations + -

Alarm Mode

1 of 8

AlarmClient1

Configuration

- Alarm Mode Required
- Colors Required
- Column Details Required
- Query Filters Required
- Time Settings Required
- Run-Time Behavior Required
- Data Binding Required
- Event Required

Client Mode Current Alarms

Alarm Query

```
\\1[REDACTED]AlarmGatewayProvider1\F1
\\1[REDACTED]AlarmGatewayProvider2\F2
```

☒ Use Default Ack Comment Default: Alarm Comment1

OK Cancel

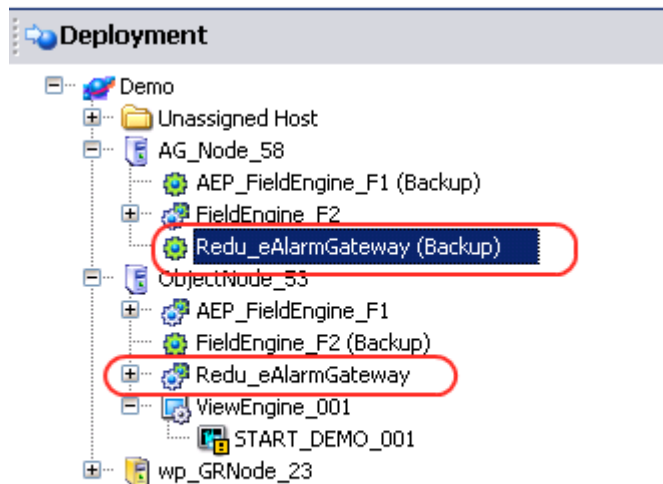
Name	User3	Group	AlarmComment	Open
Motor_Auto_99.DiscreteAlarm1		SubArea1	DiscreteAlarm1 ...	
Motor_Auto_99.AnalogAlarm1.LoLo	Test-993 11/9/20...	SubArea1	AnalogAlarm1 D...	
Motor_Auto_99.AnalogAlarm1.Lo		SubArea1	AnalogAlarm1 D...	
Motor_Auto_99.AnalogAlarm1.HiHi	Test-988 11/9/20...	SubArea1	AnalogAlarm1 D...	
Motor_Auto_99.AnalogAlarm1.Hi	Test-988 11/9/20...	SubArea1	AnalogAlarm1 D...	
Motor_Auto_99.DiscreteAlarm1		SubArea1	DiscreteAlarm1 ...	

Displaying 1 to 6 of 170 alarms Default 100% Complete Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius

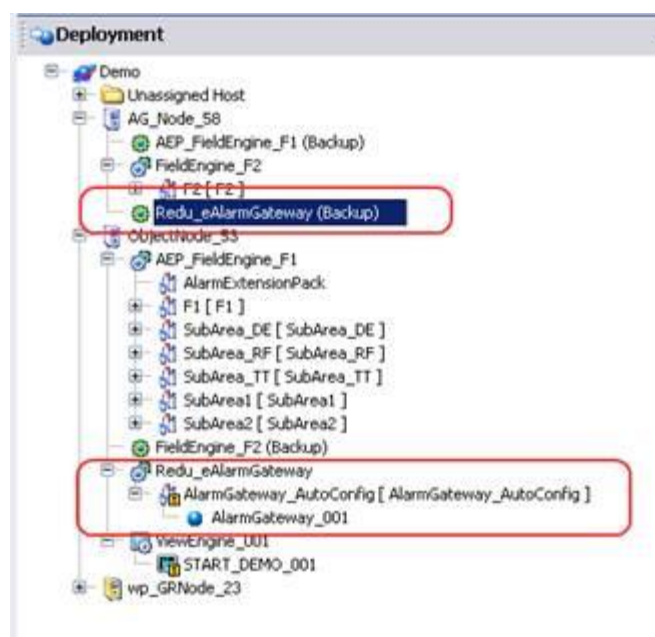
Redundant Alarm Gateway configuration setup sample

Alarm Gateway object supports WAS redundancy (for additional information please refer to WAS documentation).

- 1) Set up redundant AppEngines:
 - a. Primary – Redu_eAlarmGateway
 - b. Secondary (backup) – place on redundant partner Server.

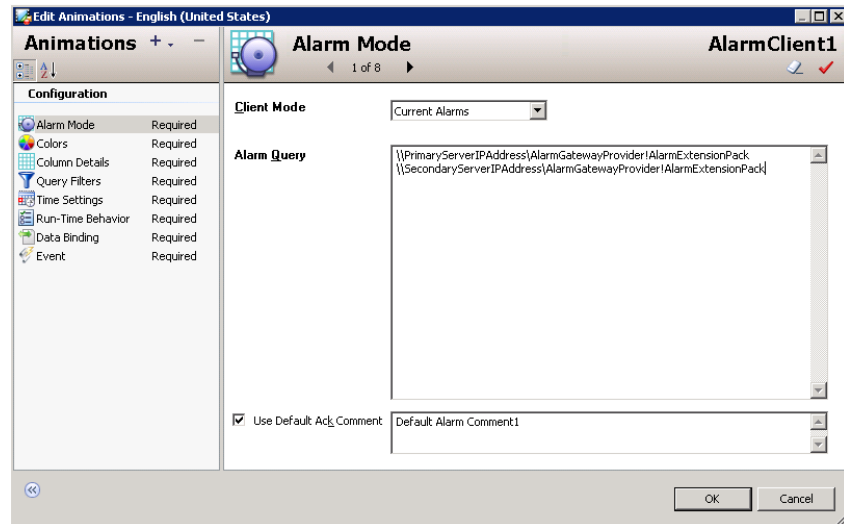


- 2) Configure Alarm gateway – there are on needed to configure additional settings for redundant Alarm Gateway setup:



- 3) Configure alarm query for alarm clients to point to Alarm Gateway on both redundant servers:

\\PrimaryServerIPAddress\AlarmGatewayProvider!AlarmExtensionPack
\\SecondaryServerIPAddress\AlarmGatewayProvider!AlarmExtensionPack

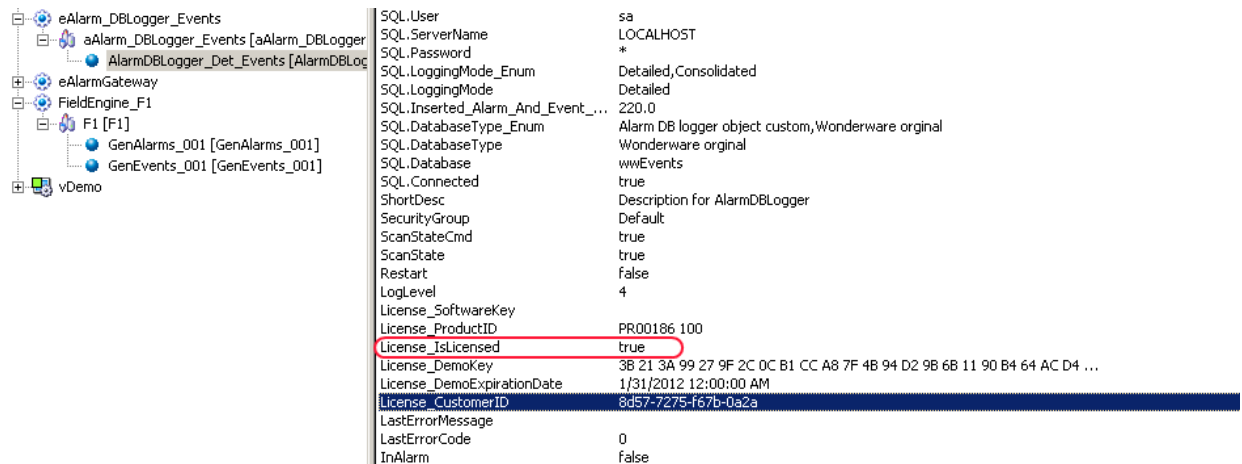


Troubleshooting

Here are common issues that may occur while using Alarm gateway object and solutions.

1) No alarms from Alarm Provider (WinPlatform) for Alarm Gateway.

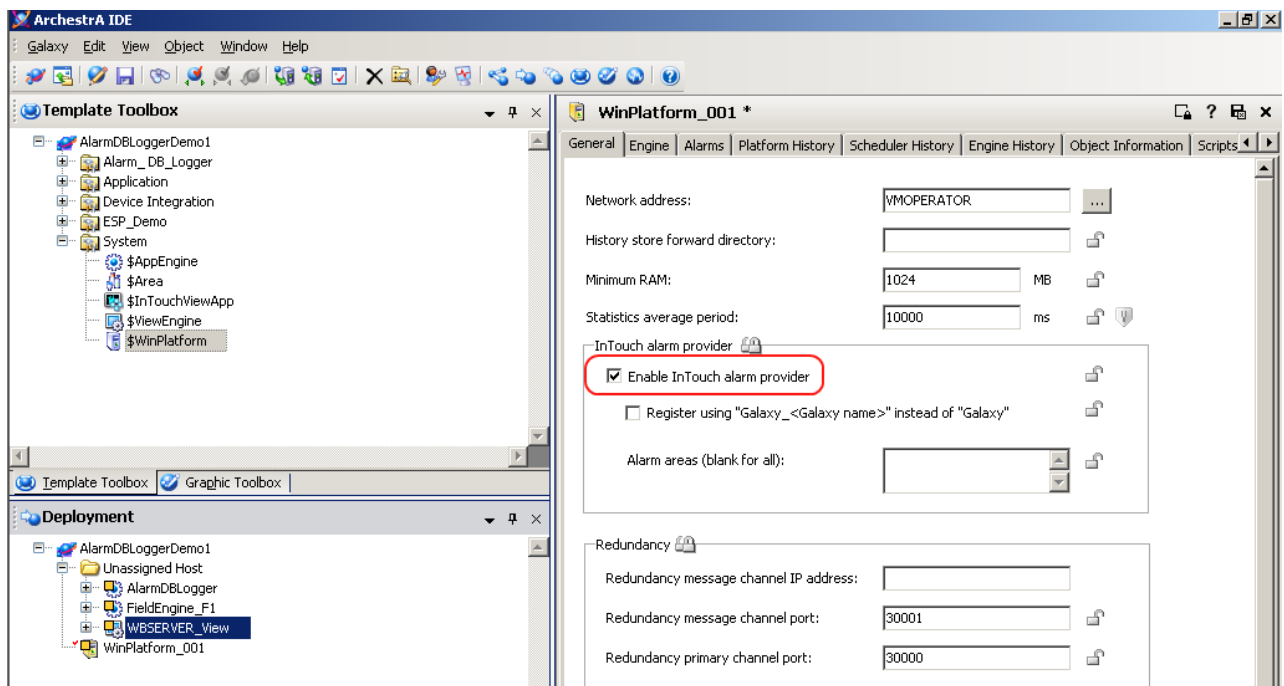
- a) check is valid Demo or full license installed for Alarm Gateway is Attribute (**License_IsLicensed = true**) in Object Viewer:



eAlarm_DBLogger_Events	SQL.User	sa
aAlarm_DBLogger_Events [aAlarm_DBLogger_Events]	SQL.ServerName	LOCALHOST
AlarmDBLogger_Det_Events [AlarmDBLogger_Det_Events]	SQL.Password	*
eAlarmGateway	SQL.LoggingMode_Enum	Detailed, Consolidated
FieldEngine_F1	SQL.LoggingMode	Detailed
GenAlarms_001 [GenAlarms_001]	SQL.Inserted_Alarm_And_Event_...	220.0
GenEvents_001 [GenEvents_001]	SQL.DatabaseType_Enum	Alarm DB logger object custom, Wonderware original
vDemo	SQL.DatabaseType	Wonderware original
	SQL.Database	wwEvents
	SQL.Connected	true
	ShortDesc	Description for AlarmDBLogger
	SecurityGroup	Default
	ScanStateCmd	true
	ScanState	true
	Restart	false
	LogLevel	4
	License_SoftwareKey	
	License_ProductID	PR00186 100
	License_IsLicensed	true
	License_DemoKey	3B 21 3A 99 27 9F 2C 0C B1 CC A8 7F 4B 94 D2 9B 6B 11 90 B4 64 AC D4 ...
	License_DemoExpirationDate	1/31/2012 12:00:00 AM
	License_CustomerID	8d57-7275-f67b-0a2a
	LastErrorMessage	
	LastErrorCode	0
	InAlarm	false

See section **Licensing requirements** for details about object licensing.

- b) check if WinPlatform object has enabled alarming - option **Enable InTouch alarm provider** is checked.



- c) if alarms are checked and alarms are displayed in any Wonderware alarm display from Platform directly, check Alarm Gateway consumer settings in Object Viewer,

is correct **alarm query, FromPriority, ToPriority** set (must be the same as in Wonderware alarm controls):

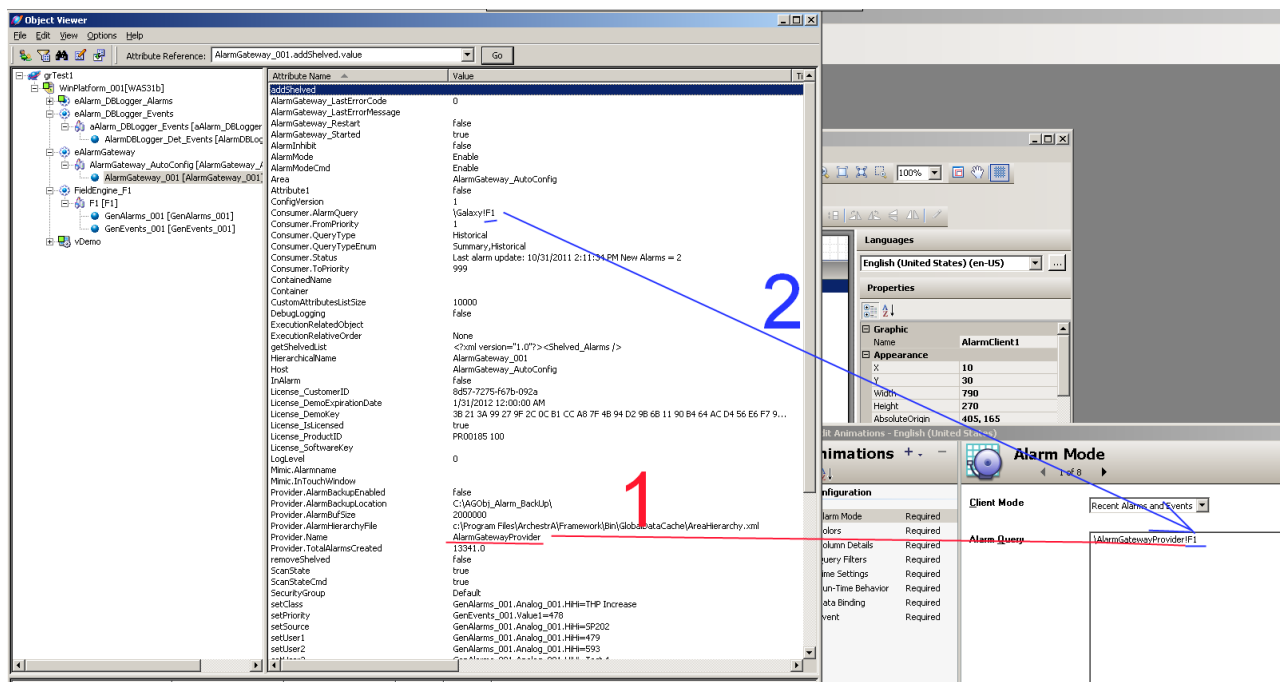
Consumer.ToPriority	999
Consumer.Status	Last alarm update: 10/31/2011 2:11:34 PM New Alarms = 2
Consumer.QueryTypeEnum	Summary, Historical
Consumer.QueryType	Historical
Consumer.FromPriority	1
Consumer.AlarmQuery	\Galaxy\F1
ConfinVersion	1

2) Alarms are coming to Alarm Gateway, but no alarms displayed in alarm controls that are connected to alarm gateway

a) check are Wonderware alarm controls configured properly for Alarm gateway:

Is Alarm provider name configured properly (1 red in picture below) in Alarm control (**AlarmGatewayProvider**)

Is Alarm Areas configured properly in Alarm control must be the same as in property Consumer.AlarmQuery **F1** (2 blue in picture below).



3) Alarms are displayed into Wonderware alarm controls, but no alarms in UReason alarms system.

a) check is UReason alarms system configured properly in Alarm Gateway – check:

- **UReason.IPAddress** attribute – is correct UReason server ID address entered.
- **UReason.Local.Port** attribute – is correct port for UReason server entered.
- **UReason.User** attribute – is correct UReason user entered.
- **UReason.password** attribute – is correct UReason password entered.

Note: if UReason setting are changed is needed to restart Alarm Gateway by setting **AlarmGateway_Restart** attribute to **true**.

The screenshot shows the Object Viewer interface. The tree view on the left shows the hierarchy: grTest1 > WinPlatform_001[WAS31b] > eAlarmGateway > AlarmGateway_001 [AlarmGateway_001]. The right pane shows the 'UReason.Connected' attribute set to 'true'. Below this, a table lists various UReason attributes and their values.

Attribute Name	Value
removeShelved	false
ScanState	true
ScanStateCmd	true
SecurityGroup	Default
setClass	GenAlarms_001.Analog_001.HiHi=THP Increase
setPriority	GenEvents_001.Value1=804
setSource	GenAlarms_001.Analog_001.HiHi=5P202
setUser1	GenAlarms_001.Analog_001.HiHi=805
setUser2	GenAlarms_001.Analog_001.HiHi=805
setUser3	GenAlarms_001.Analog_001.HiHi=Test 4
ShortDesc	Description for AlarmGateway
TagName	AlarmGateway_001
UReason.Connected	true
UReason.Enabled	true
UReason.IPAddress	192.168.181.158
UReason.Local.Name	NET.ESPEventPublisher
UReason.Local.Port	61617
UReason.Mimic.Path.Console1	
UReason.Mimic.Path.Console2	
UReason.Mimic.Path.ID1	OASYSAM.ESPConsole1Request
UReason.Mimic.Path.ID2	OASYSAM.ESPConsole2Request
UReason.Password	
UReason.Port	61616
UReason.RemoteName	OASYSAM.ESPEventPublisher
UReason.Suffix	(AG)
UReason.TotalAlarmsAcked	0.0
UReason.TotalAlarmsCreated	0.0
UReason.User	admin

AttributeReference	Value	Timestamp	Quality	Status
AlarmGateway_001.UReason.Connected	true	10/28/2011 5:06:03.81...	C0:Good	Ok
AlarmGateway_001.UReason.Password	*****	10/28/2011 5:06:03.81...	C0:Good	Ok
AlarmGateway_001.AlarmGateway_Restart	false	10/28/2011 5:06:03.81...	C0:Good	Ok
AlarmGateway_001.UReason.TotalAlarmsCreated	440.0	10/28/2011 5:06:03.81...	C0:Good	Ok
AlarmGateway_001.UReason.Local.Port	61617	10/28/2011 5:06:03.81...	C0:Good	Ok
AlarmGateway_001.UReason.IPAddress	192.168.181.158	10/28/2011 5:06:03.81...	C0:Good	Ok
AlarmGateway_001.UReason.Enabled	true	10/28/2011 5:06:03.81...	C0:Good	Ok

b) If alarms are created for UReason in Alarm gateway side = **UReason.Connected = true** attribute and **UReason.TotalAlarmsCreated > 0** attribute.

and still no alarms in UReason alarming in system.

AttributeReference	Value	Timestamp	Quality	Status
AlarmGateway_001.UReason.Connected	true	10/28/2011 5:06:03.81...	C0:Good	Ok
AlarmGateway_001.UReason.Password	*****	10/28/2011 5:06:03.81...	C0:Good	Ok
AlarmGateway_001.AlarmGateway_Restart	false	10/28/2011 5:06:03.81...	C0:Good	Ok
AlarmGateway_001.UReason.TotalAlarmsCreated	440.0	10/28/2011 5:06:03.81...	C0:Good	Ok
AlarmGateway_001.UReason.Local.Port	61617	10/28/2011 5:06:03.81...	C0:Good	Ok
AlarmGateway_001.UReason.IPAddress	192.168.181.158	10/28/2011 5:06:03.81...	C0:Good	Ok
AlarmGateway_001.UReason.Enabled	true	10/28/2011 5:06:03.81...	C0:Good	Ok

Is reconnected to restart connection from Wonderware alarm system from UReason alarms side in UReason console go to tab **Data handling** -> **External Data Sources** and uncheck Enable wait for ~3 sec and check again.

OASYS AM Engineering [user : admin]

File Edit Search View Tools Arrange Window Help

Domains

New X

Domains

- ESP Surveillance
 - ESP: ESP Failures - EFTs
 - ESP: ESP Failures - Frequency Analysis
 - ESP: ESP Failures - FuzzyLogic
 - ESP: ESP Failures - Operator Support
 - ESP: Support: Calculations & Parameter Drifts
 - ESP: Support: Capacity Constraint Modelling
 - ESP: Support: Persist Values
 - ESP: Support: Test DataSets
 - ESP: Utility: Monitor Invensys Remote
 - ESP: Utility: Monitor OPC Interface
 - ESP: Utility: Monitor RDBMS Interface

01 - External Data Sources (ESP Surveillance)

The detail of the SQL Database Connection object contains File Writer objects which are the channel (interface) for writing values/records to a database.

External UConnect Connection

Status Connected OK

ServerHostname localhost Ensure Host set correctly. For remote Invensys connection, leave as Localhost ! (remote app will find OASYSAM, not other way round)

ServerPort 61617 Remote Port needs to be 61617 for default remote app. Change to 61616 for testing with remote UConnect

To disable the remote (subscription to) Invensys events toggle the Enable switch of the object External UConnect Connection.

Enable ☒

The detail of the UConnect Connection object contains event listeners to which is subscribes. The events to which this application subscribes can be generated by another UReason application or by for example an Invensys application.

Invensys Remote Active
Value true

This publisher listens for Event changes to EPSEvents, so Ack and Clear from OASYSAM can be sent back to remote Invensys application.

Messages [5]

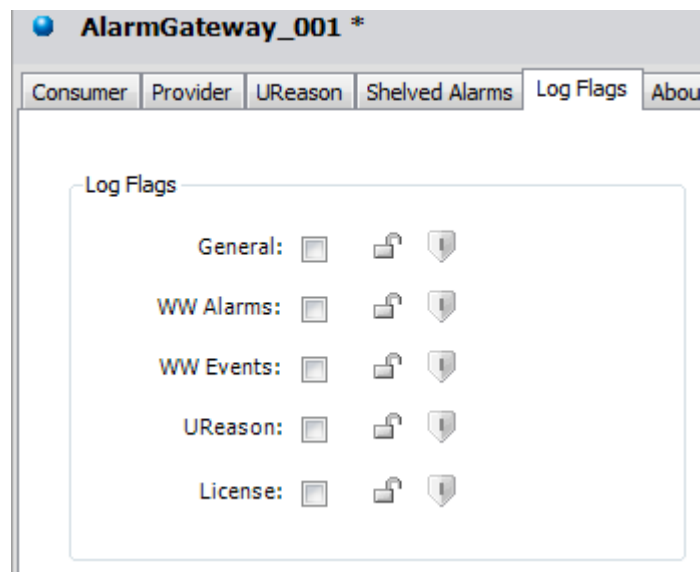
Autosave : ON Un

Advanced Troubleshooting

For advanced troubleshooting there are possible to set Log Flags - following log flags are available:

1. General – (attribute LogFlag.General) logs general logic diagnostic messages to SMC Logger.
2. WW Alarms – (attribute LogFlag.WWAlarms) logs Wonderware alarms logic diagnostic messages to SMC Logger.
3. WW Events – (attribute LogFlag.WWEvents) logs Wonderware event logic diagnostic messages to SMC Logger.
4. UReason - (attribute LogFlags.UReason) logs UReason logic diagnostic messages to SMC Logger.
5. License - (attribute LogFlags.License) logs licensing logic diagnostic messages to SMC Logger.

Log flags are possible to configure in object editor:



Log flags is possible also configure in runtime - see ArchestrA symbol **Alarm_Gateway_Details** from Klinkmann software demo:

Alarm Gateway configuration dialog

AlarmGateway_001
1.1.4512.20265 Build: 5/9/2012 : 11:15 AM

Log Flags

☐ General ☐ WWAlarms

☐ License ☐ WWEvents

☐ UReason

Total Alarms created: 359
Total Events created: 381

UReason Alarming System **Enabled:** ☒

☐ Enable **Connected:** ☒

IP: 195.2.103.13

User: admin

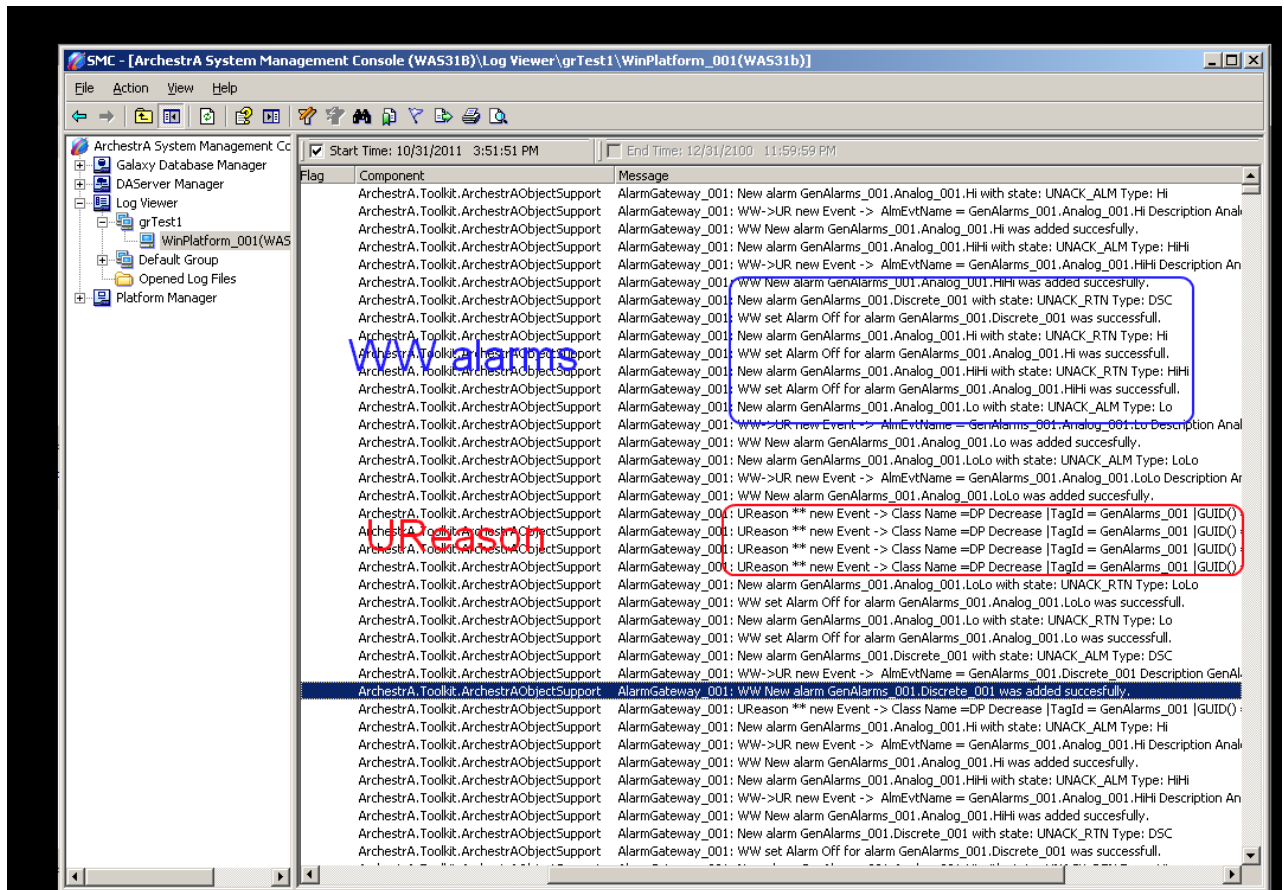
Password: ##### **Password is NOT defined scripts !! Password must be entered manually here !!**

Suffix: (AG)

WW Alarms created: 0 **WW Events created: 0**

WW Alarms ACKed from UReason: 0

Last alarm update: 5/9/2012 12:34:56 PM New Alarms = 10

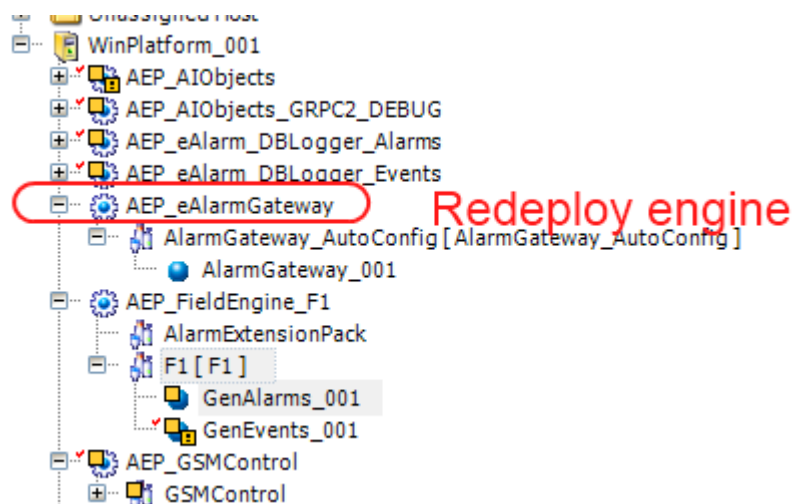


Object upgrade procedure

- 1) Open ArchestrA IDE and import new version of Alarm Gateway object.
- 2) Object state is changed to “Require software update”.



- 3) Deploy object host platform to install software update.
- 4) Redeploy all Application Engine(s) that are hosting Alarm Gateway object(s) to load latest AG runtime libraries are loaded and used.



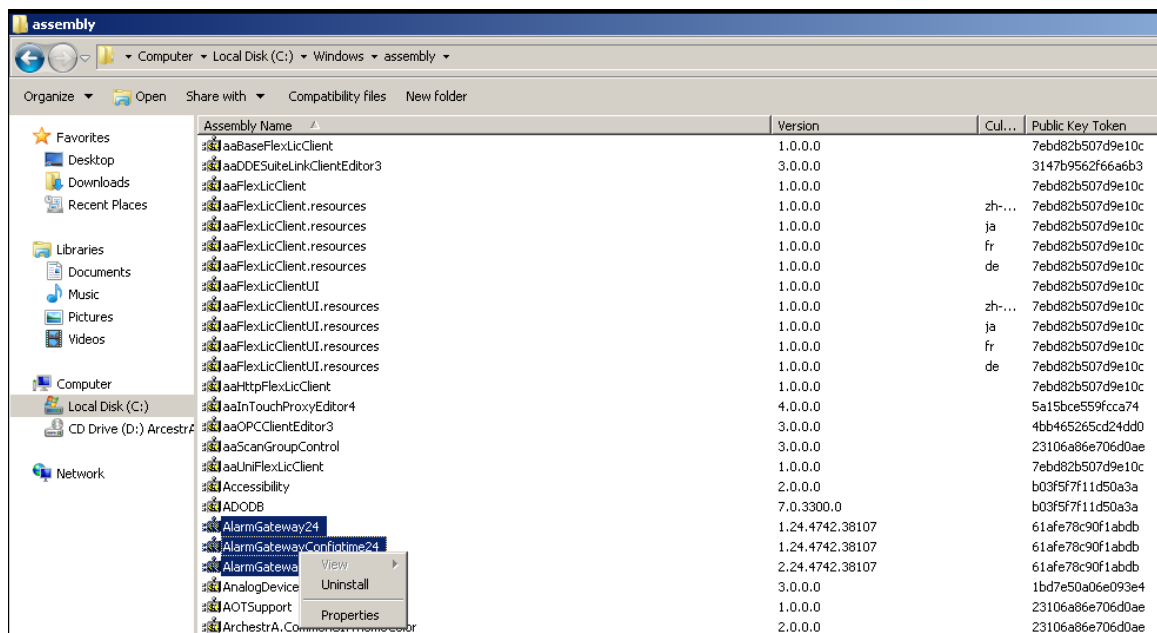
Object clean uninstall procedure

This procedure can be used to fully uninstall the object.

Can be used to downgrade to previous object version or to fix object upgrade issues.

Note: must be performed on **all WAS nodes where object was used/installed** (IDE node, object nodes).

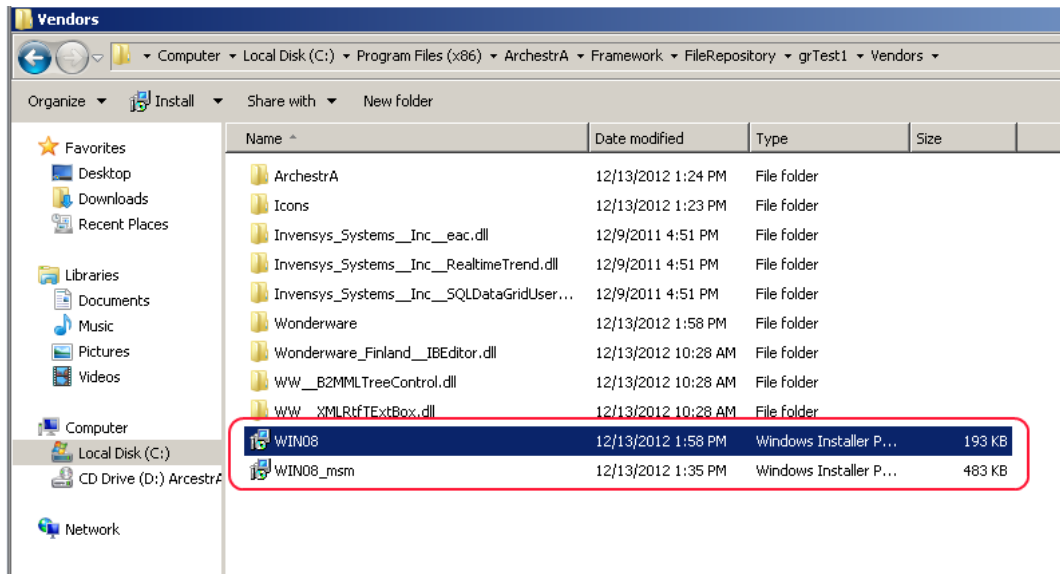
- 1) Undeploy all **WinPlatforms** that host AG object.
- 2) Delete all instances and templates from Galaxy.
- 3) Close Archestra IDE.
- 4) Uninstall manually AlarmGateway object assemblies in case if they still are installed:
 - a. Browse to folder **C:\Windows\assembly**, select all Assemblies named **AlarmGatewayXX** where XX is object version number e.g. 24.
 - b. Open context menu by clicking right mouse button and select option **Uninstall**.



- 5) Delete WAS generated MSI installers that contains links to deleted/invalid files from: **C:\Program Files (x86)\Archestra\Framework\FileRepository\<Your Galaxy Name>\Vendors**

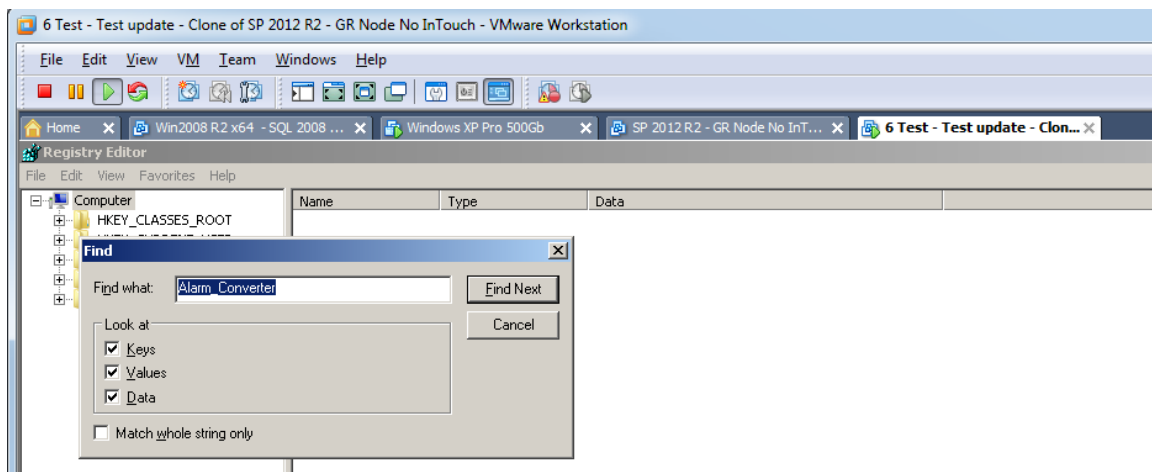
Where is **<Your Galaxy Name>** your galaxy name e.g. **grTest1**

<User name> - currently logged user name – user that was used to install object.



6) Delete temp files from C:\Windows\Temp

7) Delete all entries that contains **Alarm_Converter** from Windows registry.



8) Restart PC.

WONDERWARE FINLAND
Alarm Gateway Object
Revision History

Jun 2011	Rev 1.0	First Release
Jun 2011	Rev 1.1	Alarm Group Hierarchy XML "Associated Attribute" and "Description" changed
Sep 2011	Rev 1.2	"Custom attributes" and "UReason gateway" added.
Sep 2011	Rev 1.3	"Custom attributes" for "UReason gateway" added. Mimic windows functionality added.
Oct 2011	Rev 1.4	"Installing the Alarm Gateway Object" section modified. "Troubleshooting" and "Object upgrade procedure" sections added.
Mar 2012	Rev 1.5	Exposed Alarm field feature added.
Jul 2012	Rev 1.6	Updated Exposed attributes section.
Aug 2012	Rev. 1.7	added section Custom Acked alarm comment field.
Oct 2012	Rev. 1.9	Object version 17 updates.
Dev 2012	Rev. 1.10	Added object clean uninstall procedure.